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## Описание данных Infometeos

### Краткосрочный прогноз

Предоставляет данные краткосрочного прогноза с максимальной заблаговременностью 120 часов.

#### Технические характеристики

|                                 |              |
|---------------------------------|--------------|
| Покрытие                        | Земной шар   |
| Максимальная заблаговременность | 120 часов    |
| Шаг по сетке координат          | 0.25 градуса |

#### Параметры

- Средняя скорость ветра
- Порывы
- Накопленный ветер
- Интенсивность осадков
- Накопленные осадки
- Гроза
- Накопленная гроза
- Тип осадков
- Высота снежного покрова
- Температура воздуха
- Минимальная температура воздуха
- Максимальная температура воздуха
- Относительная влажность воздуха
- Температура точки росы
- Общая облачность
- Дальность видимости
- Туман
- Температура поверхности почвы
- Температура почвы на глубине 5-10 см
- Температура почвы на глубине 15-20 см
- Запас продуктивной влаги в почве на глубине 0-20 см
- Давление на уровне моря
- Твердые частицы  $d < 2.5 \mu\text{m}$  (PM2.5)
- Диоксид серы (SO<sub>2</sub>) в атмосфере
- Диоксид азота (NO<sub>2</sub>) у поверхности
- Монооксид углерода (CO) в атмосфере
- Озон (O<sub>3</sub>) в атмосфере (Copernicus)
- Пыль

## **События**

### **Воздух**

- Сильный мороз
- Очень сильный мороз
- Сильная жара
- Очень сильная жара

### **Ветер**

- Сильный ветер
- Очень сильный ветер
- Ураган

### **Дождь**

- Слабый дождь
- Умеренный дождь
- Сильный ливень
- Очень сильный ливень
- Ледяной дождь:
- Ледяной дождь
- Сильный ледяной дождь
- Очень сильный ледяной дождь

### **Метель**

- Метель
- Сильная метель

### **Снег:**

- Слабый снег
- Умеренный снег
- Сильный снег
- Очень сильный снег

### **Промерзание почвы**

### **Переувлажнение почвы**

### **Засуха**

### **Засуха почвенная**

## **Пожары**

Источник данных предоставляет данные по пожарам (фактические данные).

Событие «пожар» регистрируется на основе автоматического детектирования тепловых аномалий по «инфракрасным» каналам космической съемки искусственных спутников. Дополнительные датчики позволяют выявлять тепловые аномалии под облачностью.

Дискретность сканирования всей поверхности земли 2-4 раза в сутки. Отмеченные «термоточки» автоматически заносятся в базу данных после фильтрации алгоритмами (ложные температурные аномалии).

### **Входные данные**

- Широта (градусы)
- Долгота (градусы)
- Дата и время начала диапазона (необязательно)
- Дата и время окончания диапазона (необязательно)
- Минимальная достоверность событий для поиска (необязательно)

### **Выходные данные**

- Дата и время обнаружения события пожара
- Цветовая температура пожара (канал 21/22) (К)
- Цветовая температура пожара (канал 31) (К)
- Реальные размеры сканируемой точки (вероятно, км; чему именно соответствуют scan и track, мне не удалось понять, наверное, что-то одно - ширина, другое - высота)
- Достоверность события (%)
- Спутник, зафиксировавший событие (Aqua/Terra)
- Мощность излучения пожара (МВт)
- Флаг дня или ночи на момент фиксации события (день/ночь)
- Тип пожара (только для старых архивных данных) (лесной пожар/активный вулкан/пожар на море (на судне и пр.)/другое)

### **Технические характеристики**

Глубина архива: с 2000 года

ТERRITORIЯ ПОКРЫТИЯ: Весь земной шар

## Климатические данные

Предоставляет архив климатических данных с 1979 года с дискретностью по времени 1 час.

### Технические характеристики

|                        |  |
|------------------------|--|
| Покрытие               | РФ (есть возможность сделать покрытие всего земной шара) |
| Начало архива          | 1979 год   |
| Шаг по сетке координат | 0.25 градуса   |

### Параметры

- Давление на уровне моря
- Количество осадков
- Температура почвы на глубине 2 метра
- Температура поверхности почвы
- Влажность почвы
- Направление ветра
- Скорость ветра
- Относительная влажность
- Точка росы
- Температура воздуха
- Высота снежного покрова
- Тип осадков

## События

### Воздух

- Сильный мороз
- Очень сильный мороз
- Сильная жара
- Очень сильная жара

### Ветер

- Сильный ветер
- Очень сильный ветер
- Ураган

### Дождь

- Слабый дождь
- Умеренный дождь
- Сильный ливень
- Очень сильный ливень

- Ледяной дождь:
- Ледяной дождь
- Сильный ледяной дождь
- Очень сильный ледяной дождь

Метель

- Метель
- Сильная метель

Снег:

- Слабый снег
- Умеренный снег
- Сильный снег
- Очень сильный снег

Промерзание почвы

Переувлажнение почвы

Засуха

Засуха почвенная

## Гидропосты

Предоставляет архив данных гидропостов (уровень воды).

### Технические характеристики

|                           |                  |
|---------------------------|------------------|
| Количество постов         | 3000+            |
| Покрытие                  | РФ+              |
| Дата начала архива данных | 01 января 2001 г |

## Вечная мерзлота

Предоставляет архив данных станций по вечной мерзлоте.

### Технические характеристики

|                           |          |
|---------------------------|----------|
| Количество постов         | 72       |
| Дата начала архива данных | 1990 год |

## Долгосрочный прогноз погоды

Предоставляет долгосрочные прогнозы до 6 месяцев вперед.

### Технические характеристики

|                                 |              |
|---------------------------------|--------------|
| Покрытие                        | Земной шар   |
| Максимальная заблаговременность | 6 месяцев    |
| Шаг по сетке координат          | 0.25 градуса |

### Параметры

- температура воздуха 2 метра над уровнем моря
- температура поверхности
- температура точки росы
- температура почвы 5см
- температура почвы 10см
- температура почвы 100 см
- температура почвы 40 см
- температура почвы 15м
- температура почвы 20см
- температура почвы 200см
- количество выпавших осадков
- тип осадков
- относительная влажность воздуха
- продуктивная влажность 20см
- продуктивная влажность 100 см
- состояние влажности на глубине 20см
- состояние влажности на глубине 100см
- количество талой воды из снега
- высота снежного покрова
- солнечное излучение
- уровень солнечной радиации
- направление ветра
- скорость ветра
- все облака
- высокие облака
- низкие облака
- средние облака

## Гидротермический коэффициент увлажнения Селянинова (ГТК)

Гидротермический коэффициент увлажнения Селянинова (ГТК) — характеристика уровня влагообеспеченности территории.

Широко используется в агрономии для общей оценки климата и выделения зон различного уровня влагообеспеченности с целью определения целесообразности выращивания тех или иных сельскохозяйственных культур.

## Описание параметров

Раздел описывает полный список параметров, которые система может предоставить.

### Пожары

Источник данных предоставляет данные по пожарам (фактические данные).

Событие «пожар» регистрируется на основе автоматического детектирования тепловых аномалий по «инфракрасным» каналам космической съемки искусственных спутников. Дополнительные датчики позволяют выявлять тепловые аномалии под облачностью.

Дискретность сканирования всей поверхности земли 2-4 раза в сутки. Отмеченные «термоточки» автоматически заносятся в базу данных после фильтрации алгоритмами (ложные температурные аномалии).

### Параметры

- Дата и время обнаружения события пожара
- Цветовая температура пожара (канал 21/22) (К)
- Цветовая температура пожара (канал 31) (К)
- Реальные размеры сканируемой точки (вероятно, км; чему именно соответствуют scan и track, мне не удалось понять, наверное, что-то одно - ширина, другое - высота)
- Достоверность события (%)
- Спутник, зафиксировавший событие (Aqua/Terra)
- Мощность излучения пожара (МВт)
- Флаг дня или ночи на момент фиксации события (день/ночь)
- Тип пожара (только для старых архивных данных) (лесной пожар/активный вулкан/пожар на море (на судне и пр.)/другое)

### Технические характеристики

Глубина архива: с 2000 года

ТERRITORIЯ ПОКРЫТИЯ: Весь земной шар

## Краткосрочный прогноз

Предоставляет данные краткосрочного прогноза погоды с дискретностью по времени один час.

### Характеристики модели

|  |  |
|--|--|
| Покрытие                                       | Весь земной шар  |
| Шаг данных по географической системе координат | 0.25 градуса   |
| Дискретность по времени                        | Выдает прогноз каждый час в течение первых 120 часов, а затем каждые 3 часа в течение дней 5–16. |
| Максимальная заблаговременность                | прогнозы на срок до 16 дней  |

### Описание параметров модели

| Level/Layer              | Parameter | Description                         |
|--------------------------|-----------|-------------------------------------|
| mean sea level           | PRMSL     | Pressure Reduced to MSL [Pa]        |
| 1 hybrid level           | CLWMR     | Cloud Mixing Ratio [kg/kg]          |
| 1 hybrid level           | ICMR      | Ice Water Mixing Ratio [kg/kg]      |
| 1 hybrid level           | RWMR      | Rain Mixing Ratio [kg/kg]           |
| 1 hybrid level           | SNMR      | Snow Mixing Ratio [kg/kg]           |
| 1 hybrid level           | GRLE      | Graupel [kg/kg]                     |
| 1 hybrid level           | REFD      | Reflectivity [dB]                   |
| 2 hybrid level           | REFD      | Reflectivity [dB]                   |
| entire atmosphere        | REFC      | Composite reflectivity [dB]         |
| surface                  | VIS       | Visibility [m]                      |
| planetary boundary layer | UGRD      | U-Component of Wind [m/s]           |
| planetary boundary layer | VGRD      | V-Component of Wind [m/s]           |
| planetary boundary layer | VRATE     | Ventilation Rate [m^2/s]            |
| surface                  | GUST      | Wind Speed (Gust) [m/s]             |
| 0.01 mb                  | HGT       | Geopotential Height [gpm]           |
| 0.01 mb                  | TMP       | Temperature [K]                     |
| 0.01 mb                  | RH        | Relative Humidity [%]               |
| 0.01 mb                  | SPFH      | Specific Humidity [kg/kg]           |
| 0.01 mb                  | VVEL      | Vertical Velocity (Pressure) [Pa/s] |
| 0.01 mb                  | DZDT      | Vertical Velocity (Geometric) [m/s] |
| 0.01 mb                  | UGRD      | U-Component of Wind [m/s]           |
| 0.01 mb                  | VGRD      | V-Component of Wind [m/s]           |
| 0.01 mb                  | ABSV      | Absolute Vorticity [1/s]            |
| 0.01 mb                  | O3MR      | Ozone Mixing Ratio [kg/kg]          |
| 0.02 mb                  | HGT       | Geopotential Height [gpm]           |
| 0.02 mb                  | TMP       | Temperature [K]                     |
| 0.02 mb                  | RH        | Relative Humidity [%]               |
| 0.02 mb                  | SPFH      | Specific Humidity [kg/kg]           |
| 0.02 mb                  | VVEL      | Vertical Velocity (Pressure) [Pa/s] |

|         |      |                                     |
|---------|------|-------------------------------------|
| 0.02 mb | DZDT | Vertical Velocity (Geometric) [m/s] |
| 0.02 mb | UGRD | U-Component of Wind [m/s]           |
| 0.02 mb | VGRD | V-Component of Wind [m/s]           |
| 0.02 mb | ABSV | Absolute Vorticity [1/s]            |
| 0.02 mb | O3MR | Ozone Mixing Ratio [kg/kg]          |
| 0.04 mb | HGT  | Geopotential Height [gpm]           |
| 0.04 mb | TMP  | Temperature [K]                     |
| 0.04 mb | RH   | Relative Humidity [%]               |
| 0.04 mb | SPFH | Specific Humidity [kg/kg]           |
| 0.04 mb | VVEL | Vertical Velocity (Pressure) [Pa/s] |
| 0.04 mb | DZDT | Vertical Velocity (Geometric) [m/s] |
| 0.04 mb | UGRD | U-Component of Wind [m/s]           |
| 0.04 mb | VGRD | V-Component of Wind [m/s]           |
| 0.04 mb | ABSV | Absolute Vorticity [1/s]            |
| 0.04 mb | O3MR | Ozone Mixing Ratio [kg/kg]          |
| 0.07 mb | HGT  | Geopotential Height [gpm]           |
| 0.07 mb | TMP  | Temperature [K]                     |
| 0.07 mb | RH   | Relative Humidity [%]               |
| 0.07 mb | SPFH | Specific Humidity [kg/kg]           |
| 0.07 mb | VVEL | Vertical Velocity (Pressure) [Pa/s] |
| 0.07 mb | DZDT | Vertical Velocity (Geometric) [m/s] |
| 0.07 mb | UGRD | U-Component of Wind [m/s]           |
| 0.07 mb | VGRD | V-Component of Wind [m/s]           |
| 0.07 mb | ABSV | Absolute Vorticity [1/s]            |
| 0.07 mb | O3MR | Ozone Mixing Ratio [kg/kg]          |
| 0.1 mb  | HGT  | Geopotential Height [gpm]           |
| 0.1 mb  | TMP  | Temperature [K]                     |
| 0.1 mb  | RH   | Relative Humidity [%]               |
| 0.1 mb  | SPFH | Specific Humidity [kg/kg]           |
| 0.1 mb  | VVEL | Vertical Velocity (Pressure) [Pa/s] |
| 0.1 mb  | DZDT | Vertical Velocity (Geometric) [m/s] |
| 0.1 mb  | UGRD | U-Component of Wind [m/s]           |
| 0.1 mb  | VGRD | V-Component of Wind [m/s]           |
| 0.1 mb  | ABSV | Absolute Vorticity [1/s]            |
| 0.1 mb  | O3MR | Ozone Mixing Ratio [kg/kg]          |
| 0.2 mb  | HGT  | Geopotential Height [gpm]           |
| 0.2 mb  | TMP  | Temperature [K]                     |
| 0.2 mb  | RH   | Relative Humidity [%]               |
| 0.2 mb  | SPFH | Specific Humidity [kg/kg]           |
| 0.2 mb  | VVEL | Vertical Velocity (Pressure) [Pa/s] |

|        |      |                                     |
|--------|------|-------------------------------------|
| 0.2 mb | DZDT | Vertical Velocity (Geometric) [m/s] |
| 0.2 mb | UGRD | U-Component of Wind [m/s]           |
| 0.2 mb | VGRD | V-Component of Wind [m/s]           |
| 0.2 mb | ABSV | Absolute Vorticity [1/s]            |
| 0.2 mb | O3MR | Ozone Mixing Ratio [kg/kg]          |
| 0.4 mb | HGT  | Geopotential Height [gpm]           |
| 0.4 mb | TMP  | Temperature [K]                     |
| 0.4 mb | RH   | Relative Humidity [%]               |
| 0.4 mb | SPFH | Specific Humidity [kg/kg]           |
| 0.4 mb | VVEL | Vertical Velocity (Pressure) [Pa/s] |
| 0.4 mb | DZDT | Vertical Velocity (Geometric) [m/s] |
| 0.4 mb | UGRD | U-Component of Wind [m/s]           |
| 0.4 mb | VGRD | V-Component of Wind [m/s]           |
| 0.4 mb | ABSV | Absolute Vorticity [1/s]            |
| 0.4 mb | O3MR | Ozone Mixing Ratio [kg/kg]          |
| 0.7 mb | HGT  | Geopotential Height [gpm]           |
| 0.7 mb | TMP  | Temperature [K]                     |
| 0.7 mb | RH   | Relative Humidity [%]               |
| 0.7 mb | SPFH | Specific Humidity [kg/kg]           |
| 0.7 mb | VVEL | Vertical Velocity (Pressure) [Pa/s] |
| 0.7 mb | DZDT | Vertical Velocity (Geometric) [m/s] |
| 0.7 mb | UGRD | U-Component of Wind [m/s]           |
| 0.7 mb | VGRD | V-Component of Wind [m/s]           |
| 0.7 mb | ABSV | Absolute Vorticity [1/s]            |
| 0.7 mb | O3MR | Ozone Mixing Ratio [kg/kg]          |
| 1 mb   | HGT  | Geopotential Height [gpm]           |
| 1 mb   | TMP  | Temperature [K]                     |
| 1 mb   | RH   | Relative Humidity [%]               |
| 1 mb   | SPFH | Specific Humidity [kg/kg]           |
| 1 mb   | VVEL | Vertical Velocity (Pressure) [Pa/s] |
| 1 mb   | DZDT | Vertical Velocity (Geometric) [m/s] |
| 1 mb   | UGRD | U-Component of Wind [m/s]           |
| 1 mb   | VGRD | V-Component of Wind [m/s]           |
| 1 mb   | ABSV | Absolute Vorticity [1/s]            |
| 1 mb   | O3MR | Ozone Mixing Ratio [kg/kg]          |
| 2 mb   | HGT  | Geopotential Height [gpm]           |
| 2 mb   | TMP  | Temperature [K]                     |
| 2 mb   | RH   | Relative Humidity [%]               |
| 2 mb   | SPFH | Specific Humidity [kg/kg]           |
| 2 mb   | VVEL | Vertical Velocity (Pressure) [Pa/s] |

|       |      |                                     |
|-------|------|-------------------------------------|
| 2 mb  | DZDT | Vertical Velocity (Geometric) [m/s] |
| 2 mb  | UGRD | U-Component of Wind [m/s]           |
| 2 mb  | VGRD | V-Component of Wind [m/s]           |
| 2 mb  | ABSV | Absolute Vorticity [1/s]            |
| 2 mb  | O3MR | Ozone Mixing Ratio [kg/kg]          |
| 3 mb  | HGT  | Geopotential Height [gpm]           |
| 3 mb  | TMP  | Temperature [K]                     |
| 3 mb  | RH   | Relative Humidity [%]               |
| 3 mb  | SPFH | Specific Humidity [kg/kg]           |
| 3 mb  | VVEL | Vertical Velocity (Pressure) [Pa/s] |
| 3 mb  | DZDT | Vertical Velocity (Geometric) [m/s] |
| 3 mb  | UGRD | U-Component of Wind [m/s]           |
| 3 mb  | VGRD | V-Component of Wind [m/s]           |
| 3 mb  | ABSV | Absolute Vorticity [1/s]            |
| 3 mb  | O3MR | Ozone Mixing Ratio [kg/kg]          |
| 5 mb  | HGT  | Geopotential Height [gpm]           |
| 5 mb  | TMP  | Temperature [K]                     |
| 5 mb  | RH   | Relative Humidity [%]               |
| 5 mb  | SPFH | Specific Humidity [kg/kg]           |
| 5 mb  | VVEL | Vertical Velocity (Pressure) [Pa/s] |
| 5 mb  | DZDT | Vertical Velocity (Geometric) [m/s] |
| 5 mb  | UGRD | U-Component of Wind [m/s]           |
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| 5 mb  | ABSV | Absolute Vorticity [1/s]            |
| 5 mb  | O3MR | Ozone Mixing Ratio [kg/kg]          |
| 7 mb  | HGT  | Geopotential Height [gpm]           |
| 7 mb  | TMP  | Temperature [K]                     |
| 7 mb  | RH   | Relative Humidity [%]               |
| 7 mb  | SPFH | Specific Humidity [kg/kg]           |
| 7 mb  | VVEL | Vertical Velocity (Pressure) [Pa/s] |
| 7 mb  | DZDT | Vertical Velocity (Geometric) [m/s] |
| 7 mb  | UGRD | U-Component of Wind [m/s]           |
| 7 mb  | VGRD | V-Component of Wind [m/s]           |
| 7 mb  | ABSV | Absolute Vorticity [1/s]            |
| 7 mb  | O3MR | Ozone Mixing Ratio [kg/kg]          |
| 10 mb | HGT  | Geopotential Height [gpm]           |
| 10 mb | TMP  | Temperature [K]                     |
| 10 mb | RH   | Relative Humidity [%]               |
| 10 mb | SPFH | Specific Humidity [kg/kg]           |
| 10 mb | VVEL | Vertical Velocity (Pressure) [Pa/s] |

|       |      |                                     |
|-------|------|-------------------------------------|
| 10 mb | DZDT | Vertical Velocity (Geometric) [m/s] |
| 10 mb | UGRD | U-Component of Wind [m/s]           |
| 10 mb | VGRD | V-Component of Wind [m/s]           |
| 10 mb | ABSV | Absolute Vorticity [1/s]            |
| 10 mb | O3MR | Ozone Mixing Ratio [kg/kg]          |
| 15 mb | HGT  | Geopotential Height [gpm]           |
| 15 mb | TMP  | Temperature [K]                     |
| 15 mb | RH   | Relative Humidity [%]               |
| 15 mb | SPFH | Specific Humidity [kg/kg]           |
| 15 mb | VVEL | Vertical Velocity (Pressure) [Pa/s] |
| 15 mb | DZDT | Vertical Velocity (Geometric) [m/s] |
| 15 mb | UGRD | U-Component of Wind [m/s]           |
| 15 mb | VGRD | V-Component of Wind [m/s]           |
| 15 mb | ABSV | Absolute Vorticity [1/s]            |
| 15 mb | O3MR | Ozone Mixing Ratio [kg/kg]          |
| 20 mb | HGT  | Geopotential Height [gpm]           |
| 20 mb | TMP  | Temperature [K]                     |
| 20 mb | RH   | Relative Humidity [%]               |
| 20 mb | SPFH | Specific Humidity [kg/kg]           |
| 20 mb | VVEL | Vertical Velocity (Pressure) [Pa/s] |
| 20 mb | DZDT | Vertical Velocity (Geometric) [m/s] |
| 20 mb | UGRD | U-Component of Wind [m/s]           |
| 20 mb | VGRD | V-Component of Wind [m/s]           |
| 20 mb | ABSV | Absolute Vorticity [1/s]            |
| 20 mb | O3MR | Ozone Mixing Ratio [kg/kg]          |
| 30 mb | HGT  | Geopotential Height [gpm]           |
| 30 mb | TMP  | Temperature [K]                     |
| 30 mb | RH   | Relative Humidity [%]               |
| 30 mb | SPFH | Specific Humidity [kg/kg]           |
| 30 mb | VVEL | Vertical Velocity (Pressure) [Pa/s] |
| 30 mb | DZDT | Vertical Velocity (Geometric) [m/s] |
| 30 mb | UGRD | U-Component of Wind [m/s]           |
| 30 mb | VGRD | V-Component of Wind [m/s]           |
| 30 mb | ABSV | Absolute Vorticity [1/s]            |
| 30 mb | O3MR | Ozone Mixing Ratio [kg/kg]          |
| 40 mb | HGT  | Geopotential Height [gpm]           |
| 40 mb | TMP  | Temperature [K]                     |
| 40 mb | RH   | Relative Humidity [%]               |
| 40 mb | SPFH | Specific Humidity [kg/kg]           |
| 40 mb | VVEL | Vertical Velocity (Pressure) [Pa/s] |

|        |       |                                     |
|--------|-------|-------------------------------------|
| 40 mb  | DZDT  | Vertical Velocity (Geometric) [m/s] |
| 40 mb  | UGRD  | U-Component of Wind [m/s]           |
| 40 mb  | VGRD  | V-Component of Wind [m/s]           |
| 40 mb  | ABSV  | Absolute Vorticity [1/s]            |
| 40 mb  | O3MR  | Ozone Mixing Ratio [kg/kg]          |
| 50 mb  | HGT   | Geopotential Height [gpm]           |
| 50 mb  | TMP   | Temperature [K]                     |
| 50 mb  | RH    | Relative Humidity [%]               |
| 50 mb  | TCDC  | Total Cloud Cover [%]               |
| 50 mb  | SPFH  | Specific Humidity [kg/kg]           |
| 50 mb  | VVEL  | Vertical Velocity (Pressure) [Pa/s] |
| 50 mb  | DZDT  | Vertical Velocity (Geometric) [m/s] |
| 50 mb  | UGRD  | U-Component of Wind [m/s]           |
| 50 mb  | VGRD  | V-Component of Wind [m/s]           |
| 50 mb  | ABSV  | Absolute Vorticity [1/s]            |
| 50 mb  | CLWMR | Cloud Mixing Ratio [kg/kg]          |
| 50 mb  | ICMR  | Ice Water Mixing Ratio [kg/kg]      |
| 50 mb  | RWMR  | Rain Mixing Ratio [kg/kg]           |
| 50 mb  | SNMR  | Snow Mixing Ratio [kg/kg]           |
| 50 mb  | GRLE  | Graupel [kg/kg]                     |
| 50 mb  | O3MR  | Ozone Mixing Ratio [kg/kg]          |
| 70 mb  | HGT   | Geopotential Height [gpm]           |
| 70 mb  | TMP   | Temperature [K]                     |
| 70 mb  | RH    | Relative Humidity [%]               |
| 70 mb  | SPFH  | Specific Humidity [kg/kg]           |
| 70 mb  | VVEL  | Vertical Velocity (Pressure) [Pa/s] |
| 70 mb  | DZDT  | Vertical Velocity (Geometric) [m/s] |
| 70 mb  | UGRD  | U-Component of Wind [m/s]           |
| 70 mb  | VGRD  | V-Component of Wind [m/s]           |
| 70 mb  | ABSV  | Absolute Vorticity [1/s]            |
| 70 mb  | O3MR  | Ozone Mixing Ratio [kg/kg]          |
| 100 mb | HGT   | Geopotential Height [gpm]           |
| 100 mb | TMP   | Temperature [K]                     |
| 100 mb | RH    | Relative Humidity [%]               |
| 100 mb | TCDC  | Total Cloud Cover [%]               |
| 100 mb | SPFH  | Specific Humidity [kg/kg]           |
| 100 mb | VVEL  | Vertical Velocity (Pressure) [Pa/s] |
| 100 mb | DZDT  | Vertical Velocity (Geometric) [m/s] |
| 100 mb | UGRD  | U-Component of Wind [m/s]           |
| 100 mb | VGRD  | V-Component of Wind [m/s]           |
| 100 mb | ABSV  | Absolute Vorticity [1/s]            |

|        |       |                                     |
|--------|-------|-------------------------------------|
| 100 mb | CLWMR | Cloud Mixing Ratio [kg/kg]          |
| 100 mb | ICMR  | Ice Water Mixing Ratio [kg/kg]      |
| 100 mb | RWMR  | Rain Mixing Ratio [kg/kg]           |
| 100 mb | SNMR  | Snow Mixing Ratio [kg/kg]           |
| 100 mb | GRLE  | Graupel [kg/kg]                     |
| 100 mb | O3MR  | Ozone Mixing Ratio [kg/kg]          |
| 150 mb | HGT   | Geopotential Height [gpm]           |
| 150 mb | TMP   | Temperature [K]                     |
| 150 mb | RH    | Relative Humidity [%]               |
| 150 mb | TCDC  | Total Cloud Cover [%]               |
| 150 mb | SPFH  | Specific Humidity [kg/kg]           |
| 150 mb | VVEL  | Vertical Velocity (Pressure) [Pa/s] |
| 150 mb | DZDT  | Vertical Velocity (Geometric) [m/s] |
| 150 mb | UGRD  | U-Component of Wind [m/s]           |
| 150 mb | VGRD  | V-Component of Wind [m/s]           |
| 150 mb | ABSV  | Absolute Vorticity [1/s]            |
| 150 mb | CLWMR | Cloud Mixing Ratio [kg/kg]          |
| 150 mb | ICMR  | Ice Water Mixing Ratio [kg/kg]      |
| 150 mb | RWMR  | Rain Mixing Ratio [kg/kg]           |
| 150 mb | SNMR  | Snow Mixing Ratio [kg/kg]           |
| 150 mb | GRLE  | Graupel [kg/kg]                     |
| 150 mb | O3MR  | Ozone Mixing Ratio [kg/kg]          |
| 200 mb | HGT   | Geopotential Height [gpm]           |
| 200 mb | TMP   | Temperature [K]                     |
| 200 mb | RH    | Relative Humidity [%]               |
| 200 mb | TCDC  | Total Cloud Cover [%]               |
| 200 mb | SPFH  | Specific Humidity [kg/kg]           |
| 200 mb | VVEL  | Vertical Velocity (Pressure) [Pa/s] |
| 200 mb | DZDT  | Vertical Velocity (Geometric) [m/s] |
| 200 mb | UGRD  | U-Component of Wind [m/s]           |
| 200 mb | VGRD  | V-Component of Wind [m/s]           |
| 200 mb | ABSV  | Absolute Vorticity [1/s]            |
| 200 mb | CLWMR | Cloud Mixing Ratio [kg/kg]          |
| 200 mb | ICMR  | Ice Water Mixing Ratio [kg/kg]      |
| 200 mb | RWMR  | Rain Mixing Ratio [kg/kg]           |
| 200 mb | SNMR  | Snow Mixing Ratio [kg/kg]           |
| 200 mb | GRLE  | Graupel [kg/kg]                     |
| 200 mb | O3MR  | Ozone Mixing Ratio [kg/kg]          |
| 250 mb | HGT   | Geopotential Height [gpm]           |
| 250 mb | TMP   | Temperature [K]                     |
| 250 mb | RH    | Relative Humidity [%]               |
| 250 mb | TCDC  | Total Cloud Cover [%]               |
| 250 mb | SPFH  | Specific Humidity [kg/kg]           |

|        |       |  |
|--------|-------|--|
| 250 mb | VVEL  | Vertical Velocity (Pressure)<br>[Pa/s] |
| 250 mb | DZDT  | Vertical Velocity (Geometric)<br>[m/s] |
| 250 mb | UGRD  | U-Component of Wind [m/s]              |
| 250 mb | VGRD  | V-Component of Wind [m/s]              |
| 250 mb | ABSV  | Absolute Vorticity [1/s]               |
| 250 mb | CLWMR | Cloud Mixing Ratio [kg/kg]             |
| 250 mb | ICMR  | Ice Water Mixing Ratio [kg/kg]         |
| 250 mb | RWMR  | Rain Mixing Ratio [kg/kg]              |
| 250 mb | SNMR  | Snow Mixing Ratio [kg/kg]              |
| 250 mb | GRLE  | Graupel [kg/kg]                        |
| 250 mb | O3MR  | Ozone Mixing Ratio [kg/kg]             |
| 300 mb | HGT   | Geopotential Height [gpm]              |
| 300 mb | TMP   | Temperature [K]                        |
| 300 mb | RH    | Relative Humidity [%]                  |
| 300 mb | TCDC  | Total Cloud Cover [%]                  |
| 300 mb | SPFH  | Specific Humidity [kg/kg]              |
| 300 mb | VVEL  | Vertical Velocity (Pressure)<br>[Pa/s] |
| 300 mb | DZDT  | Vertical Velocity (Geometric)<br>[m/s] |
| 300 mb | UGRD  | U-Component of Wind [m/s]              |
| 300 mb | VGRD  | V-Component of Wind [m/s]              |
| 300 mb | ABSV  | Absolute Vorticity [1/s]               |
| 300 mb | CLWMR | Cloud Mixing Ratio [kg/kg]             |
| 300 mb | ICMR  | Ice Water Mixing Ratio [kg/kg]         |
| 300 mb | RWMR  | Rain Mixing Ratio [kg/kg]              |
| 300 mb | SNMR  | Snow Mixing Ratio [kg/kg]              |
| 300 mb | GRLE  | Graupel [kg/kg]                        |
| 300 mb | O3MR  | Ozone Mixing Ratio [kg/kg]             |
| 350 mb | HGT   | Geopotential Height [gpm]              |
| 350 mb | TMP   | Temperature [K]                        |
| 350 mb | RH    | Relative Humidity [%]                  |
| 350 mb | TCDC  | Total Cloud Cover [%]                  |
| 350 mb | SPFH  | Specific Humidity [kg/kg]              |
| 350 mb | VVEL  | Vertical Velocity (Pressure)<br>[Pa/s] |
| 350 mb | DZDT  | Vertical Velocity (Geometric)<br>[m/s] |
| 350 mb | UGRD  | U-Component of Wind [m/s]              |
| 350 mb | VGRD  | V-Component of Wind [m/s]              |
| 350 mb | ABSV  | Absolute Vorticity [1/s]               |
| 350 mb | CLWMR | Cloud Mixing Ratio [kg/kg]             |
| 350 mb | ICMR  | Ice Water Mixing Ratio [kg/kg]         |
| 350 mb | RWMR  | Rain Mixing Ratio [kg/kg]              |
| 350 mb | SNMR  | Snow Mixing Ratio [kg/kg]              |
| 350 mb | GRLE  | Graupel [kg/kg]                        |

|        |       |                                     |
|--------|-------|-------------------------------------|
| 350 mb | O3MR  | Ozone Mixing Ratio [kg/kg]          |
| 400 mb | HGT   | Geopotential Height [gpm]           |
| 400 mb | TMP   | Temperature [K]                     |
| 400 mb | RH    | Relative Humidity [%]               |
| 400 mb | TCDC  | Total Cloud Cover [%]               |
| 400 mb | SPFH  | Specific Humidity [kg/kg]           |
| 400 mb | VVEL  | Vertical Velocity (Pressure) [Pa/s] |
| 400 mb | DZDT  | Vertical Velocity (Geometric) [m/s] |
| 400 mb | UGRD  | U-Component of Wind [m/s]           |
| 400 mb | VGRD  | V-Component of Wind [m/s]           |
| 400 mb | ABSV  | Absolute Vorticity [1/s]            |
| 400 mb | CLWMR | Cloud Mixing Ratio [kg/kg]          |
| 400 mb | ICMR  | Ice Water Mixing Ratio [kg/kg]      |
| 400 mb | RWMR  | Rain Mixing Ratio [kg/kg]           |
| 400 mb | SNMR  | Snow Mixing Ratio [kg/kg]           |
| 400 mb | GRLE  | Graupel [kg/kg]                     |
| 400 mb | O3MR  | Ozone Mixing Ratio [kg/kg]          |
| 450 mb | HGT   | Geopotential Height [gpm]           |
| 450 mb | TMP   | Temperature [K]                     |
| 450 mb | RH    | Relative Humidity [%]               |
| 450 mb | TCDC  | Total Cloud Cover [%]               |
| 450 mb | SPFH  | Specific Humidity [kg/kg]           |
| 450 mb | VVEL  | Vertical Velocity (Pressure) [Pa/s] |
| 450 mb | DZDT  | Vertical Velocity (Geometric) [m/s] |
| 450 mb | UGRD  | U-Component of Wind [m/s]           |
| 450 mb | VGRD  | V-Component of Wind [m/s]           |
| 450 mb | ABSV  | Absolute Vorticity [1/s]            |
| 450 mb | CLWMR | Cloud Mixing Ratio [kg/kg]          |
| 450 mb | ICMR  | Ice Water Mixing Ratio [kg/kg]      |
| 450 mb | RWMR  | Rain Mixing Ratio [kg/kg]           |
| 450 mb | SNMR  | Snow Mixing Ratio [kg/kg]           |
| 450 mb | GRLE  | Graupel [kg/kg]                     |
| 450 mb | O3MR  | Ozone Mixing Ratio [kg/kg]          |
| 500 mb | HGT   | Geopotential Height [gpm]           |
| 500 mb | TMP   | Temperature [K]                     |
| 500 mb | RH    | Relative Humidity [%]               |
| 500 mb | TCDC  | Total Cloud Cover [%]               |
| 500 mb | SPFH  | Specific Humidity [kg/kg]           |
| 500 mb | VVEL  | Vertical Velocity (Pressure) [Pa/s] |
| 500 mb | DZDT  | Vertical Velocity (Geometric) [m/s] |
| 500 mb | UGRD  | U-Component of Wind [m/s]           |
| 500 mb | VGRD  | V-Component of Wind [m/s]           |

|        |       |                                     |
|--------|-------|-------------------------------------|
| 500 mb | ABSV  | Absolute Vorticity [1/s]            |
| 500 mb | CLWMR | Cloud Mixing Ratio [kg/kg]          |
| 500 mb | ICMR  | Ice Water Mixing Ratio [kg/kg]      |
| 500 mb | RWMR  | Rain Mixing Ratio [kg/kg]           |
| 500 mb | SNMR  | Snow Mixing Ratio [kg/kg]           |
| 500 mb | GRLE  | Graupel [kg/kg]                     |
| 500 mb | O3MR  | Ozone Mixing Ratio [kg/kg]          |
| 550 mb | HGT   | Geopotential Height [gpm]           |
| 550 mb | TMP   | Temperature [K]                     |
| 550 mb | RH    | Relative Humidity [%]               |
| 550 mb | TCDC  | Total Cloud Cover [%]               |
| 550 mb | SPFH  | Specific Humidity [kg/kg]           |
| 550 mb | VVEL  | Vertical Velocity (Pressure) [Pa/s] |
| 550 mb | DZDT  | Vertical Velocity (Geometric) [m/s] |
| 550 mb | UGRD  | U-Component of Wind [m/s]           |
| 550 mb | VGRD  | V-Component of Wind [m/s]           |
| 550 mb | ABSV  | Absolute Vorticity [1/s]            |
| 550 mb | CLWMR | Cloud Mixing Ratio [kg/kg]          |
| 550 mb | ICMR  | Ice Water Mixing Ratio [kg/kg]      |
| 550 mb | RWMR  | Rain Mixing Ratio [kg/kg]           |
| 550 mb | SNMR  | Snow Mixing Ratio [kg/kg]           |
| 550 mb | GRLE  | Graupel [kg/kg]                     |
| 550 mb | O3MR  | Ozone Mixing Ratio [kg/kg]          |
| 600 mb | HGT   | Geopotential Height [gpm]           |
| 600 mb | TMP   | Temperature [K]                     |
| 600 mb | RH    | Relative Humidity [%]               |
| 600 mb | TCDC  | Total Cloud Cover [%]               |
| 600 mb | SPFH  | Specific Humidity [kg/kg]           |
| 600 mb | VVEL  | Vertical Velocity (Pressure) [Pa/s] |
| 600 mb | DZDT  | Vertical Velocity (Geometric) [m/s] |
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| 600 mb | ABSV  | Absolute Vorticity [1/s]            |
| 600 mb | CLWMR | Cloud Mixing Ratio [kg/kg]          |
| 600 mb | ICMR  | Ice Water Mixing Ratio [kg/kg]      |
| 600 mb | RWMR  | Rain Mixing Ratio [kg/kg]           |
| 600 mb | SNMR  | Snow Mixing Ratio [kg/kg]           |
| 600 mb | GRLE  | Graupel [kg/kg]                     |
| 600 mb | O3MR  | Ozone Mixing Ratio [kg/kg]          |
| 650 mb | HGT   | Geopotential Height [gpm]           |
| 650 mb | TMP   | Temperature [K]                     |
| 650 mb | RH    | Relative Humidity [%]               |
| 650 mb | TCDC  | Total Cloud Cover [%]               |

|        |       |                                     |
|--------|-------|-------------------------------------|
| 650 mb | SPFH  | Specific Humidity [kg/kg]           |
| 650 mb | VVEL  | Vertical Velocity (Pressure) [Pa/s] |
| 650 mb | DZDT  | Vertical Velocity (Geometric) [m/s] |
| 650 mb | UGRD  | U-Component of Wind [m/s]           |
| 650 mb | VGRD  | V-Component of Wind [m/s]           |
| 650 mb | ABSV  | Absolute Vorticity [1/s]            |
| 650 mb | CLWMR | Cloud Mixing Ratio [kg/kg]          |
| 650 mb | ICMR  | Ice Water Mixing Ratio [kg/kg]      |
| 650 mb | RWMR  | Rain Mixing Ratio [kg/kg]           |
| 650 mb | SNMR  | Snow Mixing Ratio [kg/kg]           |
| 650 mb | GRLE  | Graupel [kg/kg]                     |
| 650 mb | O3MR  | Ozone Mixing Ratio [kg/kg]          |
| 700 mb | HGT   | Geopotential Height [gpm]           |
| 700 mb | TMP   | Temperature [K]                     |
| 700 mb | RH    | Relative Humidity [%]               |
| 700 mb | TCDC  | Total Cloud Cover [%]               |
| 700 mb | SPFH  | Specific Humidity [kg/kg]           |
| 700 mb | VVEL  | Vertical Velocity (Pressure) [Pa/s] |
| 700 mb | DZDT  | Vertical Velocity (Geometric) [m/s] |
| 700 mb | UGRD  | U-Component of Wind [m/s]           |
| 700 mb | VGRD  | V-Component of Wind [m/s]           |
| 700 mb | ABSV  | Absolute Vorticity [1/s]            |
| 700 mb | CLWMR | Cloud Mixing Ratio [kg/kg]          |
| 700 mb | ICMR  | Ice Water Mixing Ratio [kg/kg]      |
| 700 mb | RWMR  | Rain Mixing Ratio [kg/kg]           |
| 700 mb | SNMR  | Snow Mixing Ratio [kg/kg]           |
| 700 mb | GRLE  | Graupel [kg/kg]                     |
| 700 mb | O3MR  | Ozone Mixing Ratio [kg/kg]          |
| 750 mb | HGT   | Geopotential Height [gpm]           |
| 750 mb | TMP   | Temperature [K]                     |
| 750 mb | RH    | Relative Humidity [%]               |
| 750 mb | TCDC  | Total Cloud Cover [%]               |
| 750 mb | SPFH  | Specific Humidity [kg/kg]           |
| 750 mb | VVEL  | Vertical Velocity (Pressure) [Pa/s] |
| 750 mb | DZDT  | Vertical Velocity (Geometric) [m/s] |
| 750 mb | UGRD  | U-Component of Wind [m/s]           |
| 750 mb | VGRD  | V-Component of Wind [m/s]           |
| 750 mb | ABSV  | Absolute Vorticity [1/s]            |
| 750 mb | CLWMR | Cloud Mixing Ratio [kg/kg]          |
| 750 mb | ICMR  | Ice Water Mixing Ratio [kg/kg]      |
| 750 mb | RWMR  | Rain Mixing Ratio [kg/kg]           |
| 750 mb | SNMR  | Snow Mixing Ratio [kg/kg]           |

|        |       |                                     |
|--------|-------|-------------------------------------|
| 750 mb | GRLE  | Graupel [kg/kg]                     |
| 750 mb | O3MR  | Ozone Mixing Ratio [kg/kg]          |
| 800 mb | HGT   | Geopotential Height [gpm]           |
| 800 mb | TMP   | Temperature [K]                     |
| 800 mb | RH    | Relative Humidity [%]               |
| 800 mb | TCDC  | Total Cloud Cover [%]               |
| 800 mb | SPFH  | Specific Humidity [kg/kg]           |
| 800 mb | VVEL  | Vertical Velocity (Pressure) [Pa/s] |
| 800 mb | DZDT  | Vertical Velocity (Geometric) [m/s] |
| 800 mb | UGRD  | U-Component of Wind [m/s]           |
| 800 mb | VGRD  | V-Component of Wind [m/s]           |
| 800 mb | ABSV  | Absolute Vorticity [1/s]            |
| 800 mb | CLWMR | Cloud Mixing Ratio [kg/kg]          |
| 800 mb | ICMR  | Ice Water Mixing Ratio [kg/kg]      |
| 800 mb | RWMR  | Rain Mixing Ratio [kg/kg]           |
| 800 mb | SNMR  | Snow Mixing Ratio [kg/kg]           |
| 800 mb | GRLE  | Graupel [kg/kg]                     |
| 800 mb | O3MR  | Ozone Mixing Ratio [kg/kg]          |
| 850 mb | HGT   | Geopotential Height [gpm]           |
| 850 mb | TMP   | Temperature [K]                     |
| 850 mb | RH    | Relative Humidity [%]               |
| 850 mb | TCDC  | Total Cloud Cover [%]               |
| 850 mb | SPFH  | Specific Humidity [kg/kg]           |
| 850 mb | VVEL  | Vertical Velocity (Pressure) [Pa/s] |
| 850 mb | DZDT  | Vertical Velocity (Geometric) [m/s] |
| 850 mb | UGRD  | U-Component of Wind [m/s]           |
| 850 mb | VGRD  | V-Component of Wind [m/s]           |
| 850 mb | ABSV  | Absolute Vorticity [1/s]            |
| 850 mb | CLWMR | Cloud Mixing Ratio [kg/kg]          |
| 850 mb | ICMR  | Ice Water Mixing Ratio [kg/kg]      |
| 850 mb | RWMR  | Rain Mixing Ratio [kg/kg]           |
| 850 mb | SNMR  | Snow Mixing Ratio [kg/kg]           |
| 850 mb | GRLE  | Graupel [kg/kg]                     |
| 850 mb | O3MR  | Ozone Mixing Ratio [kg/kg]          |
| 900 mb | HGT   | Geopotential Height [gpm]           |
| 900 mb | TMP   | Temperature [K]                     |
| 900 mb | RH    | Relative Humidity [%]               |
| 900 mb | TCDC  | Total Cloud Cover [%]               |
| 900 mb | SPFH  | Specific Humidity [kg/kg]           |
| 900 mb | VVEL  | Vertical Velocity (Pressure) [Pa/s] |
| 900 mb | DZDT  | Vertical Velocity (Geometric) [m/s] |
| 900 mb | UGRD  | U-Component of Wind [m/s]           |

|         |        |                                     |
|---------|--------|-------------------------------------|
| 900 mb  | VGRD   | V-Component of Wind [m/s]           |
| 900 mb  | ABSV   | Absolute Vorticity [1/s]            |
| 900 mb  | CLWMR  | Cloud Mixing Ratio [kg/kg]          |
| 900 mb  | ICMR   | Ice Water Mixing Ratio [kg/kg]      |
| 900 mb  | RWMR   | Rain Mixing Ratio [kg/kg]           |
| 900 mb  | SNMR   | Snow Mixing Ratio [kg/kg]           |
| 900 mb  | GRLE   | Graupel [kg/kg]                     |
| 900 mb  | O3MR   | Ozone Mixing Ratio [kg/kg]          |
| 925 mb  | HGT    | Geopotential Height [gpm]           |
| 925 mb  | TMP    | Temperature [K]                     |
| 925 mb  | RH     | Relative Humidity [%]               |
| 925 mb  | TCDC   | Total Cloud Cover [%]               |
| 925 mb  | SPFH   | Specific Humidity [kg/kg]           |
| 925 mb  | VVEL   | Vertical Velocity (Pressure) [Pa/s] |
| 925 mb  | DZDT   | Vertical Velocity (Geometric) [m/s] |
| 925 mb  | UGRD   | U-Component of Wind [m/s]           |
| 925 mb  | VGRD   | V-Component of Wind [m/s]           |
| 925 mb  | ABSV   | Absolute Vorticity [1/s]            |
| 925 mb  | CLWMR  | Cloud Mixing Ratio [kg/kg]          |
| 925 mb  | ICMR   | Ice Water Mixing Ratio [kg/kg]      |
| 925 mb  | RWMR   | Rain Mixing Ratio [kg/kg]           |
| 925 mb  | SNMR   | Snow Mixing Ratio [kg/kg]           |
| 925 mb  | GRLE   | Graupel [kg/kg]                     |
| 925 mb  | O3MR   | Ozone Mixing Ratio [kg/kg]          |
| 950 mb  | HGT    | Geopotential Height [gpm]           |
| 950 mb  | TMP    | Temperature [K]                     |
| 950 mb  | RH     | Relative Humidity [%]               |
| 950 mb  | TCDC   | Total Cloud Cover [%]               |
| 950 mb  | SPFH   | Specific Humidity [kg/kg]           |
| 950 mb  | VVEL   | Vertical Velocity (Pressure) [Pa/s] |
| 950 mb  | DZDT   | Vertical Velocity (Geometric) [m/s] |
| 950 mb  | UGRD   | U-Component of Wind [m/s]           |
| 950 mb  | VGRD   | V-Component of Wind [m/s]           |
| 950 mb  | ABSV   | Absolute Vorticity [1/s]            |
| 950 mb  | CLWMR  | Cloud Mixing Ratio [kg/kg]          |
| 950 mb  | ICMR   | Ice Water Mixing Ratio [kg/kg]      |
| 950 mb  | RWMR   | Rain Mixing Ratio [kg/kg]           |
| 950 mb  | SNMR   | Snow Mixing Ratio [kg/kg]           |
| 950 mb  | GRLE   | Graupel [kg/kg]                     |
| 950 mb  | O3MR   | Ozone Mixing Ratio [kg/kg]          |
| surface | HINDEX | Haines Index [Numeric]              |
| 975 mb  | HGT    | Geopotential Height [gpm]           |
| 975 mb  | TMP    | Temperature [K]                     |

|                        |         |   |
|------------------------|---------|---|
| 975 mb                 | RH      | Relative Humidity [%]                                     |
| 975 mb                 | TCDC    | Total Cloud Cover [%]                                     |
| 975 mb                 | SPFH    | Specific Humidity [kg/kg]                                 |
| 975 mb                 | VVEL    | Vertical Velocity (Pressure) [Pa/s]                       |
| 975 mb                 | DZDT    | Vertical Velocity (Geometric) [m/s]                       |
| 975 mb                 | UGRD    | U-Component of Wind [m/s]                                 |
| 975 mb                 | VGRD    | V-Component of Wind [m/s]                                 |
| 975 mb                 | ABSV    | Absolute Vorticity [1/s]                                  |
| 975 mb                 | CLWMR   | Cloud Mixing Ratio [kg/kg]                                |
| 975 mb                 | ICMR    | Ice Water Mixing Ratio [kg/kg]                            |
| 975 mb                 | RWMR    | Rain Mixing Ratio [kg/kg]                                 |
| 975 mb                 | SNMR    | Snow Mixing Ratio [kg/kg]                                 |
| 975 mb                 | GRLE    | Graupel [kg/kg]   |
| 975 mb                 | O3MR    | Ozone Mixing Ratio [kg/kg]                                |
| 1000 mb                | TMP     | Temperature [K]   |
| 1000 mb                | RH      | Relative Humidity [%]                                     |
| 1000 mb                | TCDC    | Total Cloud Cover [%]                                     |
| 1000 mb                | SPFH    | Specific Humidity [kg/kg]                                 |
| 1000 mb                | VVEL    | Vertical Velocity (Pressure) [Pa/s]                       |
| 1000 mb                | DZDT    | Vertical Velocity (Geometric) [m/s]                       |
| 1000 mb                | UGRD    | U-Component of Wind [m/s]                                 |
| 1000 mb                | VGRD    | V-Component of Wind [m/s]                                 |
| 1000 mb                | ABSV    | Absolute Vorticity [1/s]                                  |
| 1000 mb                | CLWMR   | Cloud Mixing Ratio [kg/kg]                                |
| 1000 mb                | ICMR    | Ice Water Mixing Ratio [kg/kg]                            |
| 1000 mb                | RWMR    | Rain Mixing Ratio [kg/kg]                                 |
| 1000 mb                | SNMR    | Snow Mixing Ratio [kg/kg]                                 |
| 1000 mb                | GRLE    | Graupel [kg/kg]   |
| 1000 mb                | O3MR    | Ozone Mixing Ratio [kg/kg]                                |
| mean sea level         | MSLET M | (Eta model reduction) [Pa]                                |
| 1000 mb                | HGT     | Geopotential Height [gpm]                                 |
| 4000 m above ground    | REFD    | Reflectivity [dB]   |
| 1000 m above ground    | REFD    | Reflectivity [dB]   |
| surface                | PRES    | Pressure [Pa]   |
| surface                | HGT     | Geopotential Height [gpm]                                 |
| surface                | TMP     | Temperature [K]   |
| 0-0.1 m below ground   | TSOIL   | Soil Temperature [K]                                      |
| 0-0.1 m below ground   | SOILW   | Volumetric Soil Moisture Content [Fraction]               |
| 0-0.1 m below ground   | SOILL   | Liquid Volumetric Soil Moisture (non Frozen) [Proportion] |
| 0.1-0.4 m below ground | TSOIL   | Soil Temperature [K]                                      |
| 0.1-0.4 m below ground | SOILW   | Volumetric Soil Moisture Content [Fraction]               |

|                           |       |   |
|---------------------------|-------|---|
| 0.1-0.4 m below ground    | SOILL | Liquid Volumetric Soil Moisture (non Frozen) [Proportion] |
| 0.4-1 m below ground      | TSOIL | Soil Temperature [K]                                      |
| 0.4-1 m below ground      | SOILW | Volumetric Soil Moisture Content [Fraction]               |
| 0.4-1 m below ground      | SOILL | Liquid Volumetric Soil Moisture (non Frozen) [Proportion] |
| 1-2 m below ground        | TSOIL | Soil Temperature [K]                                      |
| 1-2 m below ground        | SOILW | Volumetric Soil Moisture Content [Fraction]               |
| 1-2 m below ground        | SOILL | Liquid Volumetric Soil Moisture (non Frozen) [Proportion] |
| surface                   | CNWAT | Plant Canopy Surface Water [kg/m^2]                       |
| surface                   | WEASD | Water Equivalent of Accumulated Snow Depth [kg/m^2]       |
| surface                   | SNOD  | Snow Depth [m]  |
| surface                   | PEVPR | Potential Evaporation Rate [W/m^2]                        |
| surface                   | ICETK | Ice Thickness [m]   |
| 2 m above ground          | TMP   | Temperature [K]   |
| 2 m above ground          | SPFH  | Specific Humidity [kg/kg]                                 |
| 2 m above ground          | DPT   | Dew Point Temperature [K]                                 |
| 2 m above ground          | RH    | Relative Humidity [%]                                     |
| 2 m above ground          | APTMP | Apparent Temperature [K]                                  |
| 2 m above ground          | TMAX  | Maximum Temperature [K]                                   |
| 2 m above ground          | TMIN  | Minimum Temperature [K]                                   |
| 10 m above ground         | UGRD  | U-Component of Wind [m/s]                                 |
| 10 m above ground         | VGRD  | V-Component of Wind [m/s]                                 |
| 10 m above mean sea level | ICEG  | Ice Growth Rate [m/s]                                     |
| surface                   | CPOFP | Percent frozen precipitation [%]                          |
| surface                   | CPRAT | Convective Precipitation Rate [kg/m^2/s]                  |
| surface                   | PRATE | Precipitation Rate [kg/m^2/s]                             |
| surface                   | CPRAT | Convective Precipitation Rate [kg/m^2/s]                  |
| surface                   | PRATE | Precipitation Rate [kg/m^2/s]                             |
| surface                   | APCP  | Total Precipitation [kg/m^2]                              |
| surface                   | APCP  | Total Precipitation [kg/m^2]                              |
| surface                   | ACPCP | Convective Precipitation [kg/m^2]                         |
| surface                   | ACPCP | Convective Precipitation [kg/m^2]                         |
| surface                   | WATR  | Water Runoff [kg/m^2]                                     |
| surface                   | CSNOW | Categorical Snow [-]                                      |
| surface                   | CICEP | Categorical Ice Pellets [-]                               |
| surface                   | CFRZR | Categorical Freezing Rain [-]                             |
| surface                   | CRAIN | Categorical Rain [-]                                      |

|  |       |  |
|--|-------|--|
| surface  | CSNOW | Categorical Snow [-]                           |
| surface  | CICEP | Categorical Ice Pellets [-]                    |
| surface  | CFRZR | Categorical Freezing Rain [-]                  |
| surface  | CRAIN | Categorical Rain [-]                           |
| surface  | LHTFL | Latent Heat Net Flux [W/m^2]                   |
| surface  | SHTFL | Sensible Heat Net Flux [W/m^2]                 |
| surface  | GFLUX | Ground Heat Flux [W/m^2]                       |
| surface  | UFLX  | Momentum Flux, U-Component [N/m^2]             |
| surface  | VFLX  | Momentum Flux, V-Component [N/m^2]             |
| surface  | SFCR  | Surface Roughness [m]                          |
| surface  | FRICV | Frictional Velocity [m/s]                      |
| surface  | U-GWD | Zonal Flux of Gravity Wave Stress [N/m^2]      |
| surface  | V-GWD | Meridional Flux of Gravity Wave Stress [N/m^2] |
| surface  | VEG   | Vegetation [%]                                 |
| surface  | SOTYP | Soil Type [-]                                  |
| surface  | WILT  | Wilting Point [Fraction]                       |
| surface  | FLDCP | Field Capacity [Fraction]                      |
| surface  | SUNSD | Sunshine Duration [s]                          |
| surface  | LFTX  | Surface Lifted Index [K]                       |
| surface  | CAPE  | Convective Available Potential Energy [J/kg]   |
| surface  | CIN   | Convective Inhibition [J/kg]                   |
| entire atmosphere (considered as a single layer) | PWAT  | Precipitable Water [kg/m^2]                    |
| entire atmosphere (considered as a single layer) | CWAT  | Cloud Water [kg/m^2]                           |
| entire atmosphere (considered as a single layer) | RH    | Relative Humidity [%]                          |
| entire atmosphere (considered as a single layer) | TOZNE | Total Ozone [DU]                               |
| low cloud layer                                  | LCDC  | Low Cloud Cover [%]                            |
| low cloud layer                                  | LCDC  | Low Cloud Cover [%]                            |
| middle cloud layer                               | MCDC  | Medium Cloud Cover [%]                         |
| middle cloud layer                               | MCDC  | Medium Cloud Cover [%]                         |
| high cloud layer                                 | HCDC  | High Cloud Cover [%]                           |
| high cloud layer                                 | HCDC  | High Cloud Cover [%]                           |
| entire atmosphere                                | TCDC  | Total Cloud Cover [%]                          |
| entire atmosphere                                | TCDC  | Total Cloud Cover [%]                          |
| cloud ceiling                                    | HGT   | Geopotential Height [gpm]                      |
| convective cloud bottom level                    | PRES  | Pressure [Pa]                                  |
| low cloud bottom level                           | PRES  | Pressure [Pa]                                  |
| middle cloud bottom level                        | PRES  | Pressure [Pa]                                  |
| high cloud bottom level                          | PRES  | Pressure [Pa]                                  |
| convective cloud top level                       | PRES  | Pressure [Pa]                                  |
| low cloud top level                              | PRES  | Pressure [Pa]                                  |

|  |         |  |
|--|---------|--|
| middle cloud top level                           | PRES    | Pressure [Pa]                              |
| high cloud top level                             | PRES    | Pressure [Pa]                              |
| low cloud top level                              | TMP     | Temperature [K]                            |
| middle cloud top level                           | TMP     | Temperature [K]                            |
| high cloud top level                             | TMP     | Temperature [K]                            |
| convective cloud layer                           | TCDC    | Total Cloud Cover [%]                      |
| boundary layer cloud layer                       | TCDC    | Total Cloud Cover [%]                      |
| entire atmosphere (considered as a single layer) | CWORK   | Cloud Work Function [J/kg]                 |
| surface  | DSWRF   | Downward Short-Wave Radiation Flux [W/m^2] |
| surface  | DLWRF   | Downward Long-Wave Rad. Flux [W/m^2]       |
| surface  | USWRF   | Upward Short-Wave Radiation Flux [W/m^2]   |
| surface  | ULWRF   | Upward Long-Wave Rad. Flux [W/m^2]         |
| top of atmosphere                                | USWRF   | Upward Short-Wave Radiation Flux [W/m^2]   |
| top of atmosphere                                | ULWRF   | Upward Long-Wave Rad. Flux [W/m^2]         |
| 3000-0 m above ground                            | HLCY    | Storm Relative Helicity [m^2/s^2]          |
| 6000-0 m above ground                            | USTM    | U-Component Storm Motion [m/s]             |
| 6000-0 m above ground                            | VSTM    | V-Component Storm Motion [m/s]             |
| tropopause                                       | PRES    | Pressure [Pa]                              |
| tropopause                                       | ICAHT I | Standard Atmosphere Reference Height [m]   |
| tropopause                                       | HGT     | Geopotential Height [gpm]                  |
| tropopause                                       | TMP     | Temperature [K]                            |
| tropopause                                       | UGRD    | U-Component of Wind [m/s]                  |
| tropopause                                       | VGRD    | V-Component of Wind [m/s]                  |
| tropopause                                       | VWSH    | Vertical Speed Shear [1/s]                 |
| max wind   | PRES    | Pressure [Pa]                              |
| max wind   | ICAHT I | Standard Atmosphere Reference Height [m]   |
| max wind   | HGT     | Geopotential Height [gpm]                  |
| max wind   | UGRD    | U-Component of Wind [m/s]                  |
| max wind   | VGRD    | V-Component of Wind [m/s]                  |
| max wind   | TMP     | Temperature [K]                            |
| 20 m above ground                                | UGRD    | U-Component of Wind [m/s]                  |
| 20 m above ground                                | VGRD    | V-Component of Wind [m/s]                  |
| 30 m above ground                                | UGRD    | U-Component of Wind [m/s]                  |
| 30 m above ground                                | VGRD    | V-Component of Wind [m/s]                  |
| 40 m above ground                                | UGRD    | U-Component of Wind [m/s]                  |
| 40 m above ground                                | VGRD    | V-Component of Wind [m/s]                  |
| 50 m above ground                                | UGRD    | U-Component of Wind [m/s]                  |

|                                     |       |  |
|-------------------------------------|-------|--|
| 50 m above ground                   | VGRD  | V-Component of Wind [m/s]                    |
| 80 m above ground                   | TMP   | Temperature [K]                              |
| 80 m above ground                   | SPFH  | Specific Humidity [kg/kg]                    |
| 80 m above ground                   | PRES  | Pressure [Pa]                                |
| 80 m above ground                   | UGRD  | U-Component of Wind [m/s]                    |
| 80 m above ground                   | VGRD  | V-Component of Wind [m/s]                    |
| 100 m above ground                  | TMP   | Temperature [K]                              |
| 100 m above ground                  | UGRD  | U-Component of Wind [m/s]                    |
| 100 m above ground                  | VGRD  | V-Component of Wind [m/s]                    |
| 1829 m above mean sea level         | TMP   | Temperature [K]                              |
| 1829 m above mean sea level         | UGRD  | U-Component of Wind [m/s]                    |
| 1829 m above mean sea level         | VGRD  | V-Component of Wind [m/s]                    |
| 2743 m above mean sea level         | TMP   | Temperature [K]                              |
| 2743 m above mean sea level         | UGRD  | U-Component of Wind [m/s]                    |
| 2743 m above mean sea level         | VGRD  | V-Component of Wind [m/s]                    |
| 3658 m above mean sea level         | TMP   | Temperature [K]                              |
| 3658 m above mean sea level         | UGRD  | U-Component of Wind [m/s]                    |
| 3658 m above mean sea level         | VGRD  | V-Component of Wind [m/s]                    |
| 0C isotherm                         | HGT   | Geopotential Height [gpm]                    |
| 0C isotherm                         | RH    | Relative Humidity [%]                        |
| highest tropospheric freezing level | HGT   | Geopotential Height [gpm]                    |
| highest tropospheric freezing level | RH    | Relative Humidity [%]                        |
| 30-0 mb above ground                | TMP   | Temperature [K]                              |
| 30-0 mb above ground                | RH    | Relative Humidity [%]                        |
| 30-0 mb above ground                | SPFH  | Specific Humidity [kg/kg]                    |
| 30-0 mb above ground                | UGRD  | U-Component of Wind [m/s]                    |
| 30-0 mb above ground                | VGRD  | V-Component of Wind [m/s]                    |
| surface                             | 4LFTX | Best (4 layer) Lifted Index [K]              |
| 180-0 mb above ground               | CAPE  | Convective Available Potential Energy [J/kg] |
| 180-0 mb above ground               | CIN   | Convective Inhibition [J/kg]                 |
| surface                             | HPBL  | Planetary Boundary Layer Height [m]          |
| 0.33-1 sigma layer                  | RH    | Relative Humidity [%]                        |
| 0.44-1 sigma layer                  | RH    | Relative Humidity [%]                        |
| 0.72-0.94 sigma layer               | RH    | Relative Humidity [%]                        |
| 0.44-0.72 sigma layer               | RH    | Relative Humidity [%]                        |
| 0.995 sigma level                   | TMP   | Temperature [K]                              |
| 0.995 sigma level                   | POT   | Potential Temperature [K]                    |
| 0.995 sigma level                   | RH    | Relative Humidity [%]                        |
| 0.995 sigma level                   | UGRD  | U-Component of Wind [m/s]                    |
| 0.995 sigma level                   | VGRD  | V-Component of Wind [m/s]                    |
| 0.995 sigma level                   | VVEL  | Vertical Velocity (Pressure) [Pa/s]          |
| 90-0 mb above ground                | CAPE  | Convective Available Potential Energy [J/kg] |

|                               |        |   |
|-------------------------------|--------|---|
| 90-0 mb above ground          | CIN    | Convective Inhibition [J/kg]                        |
| 255-0 mb above ground         | CAPE   | Convective Available Potential Energy [J/kg]        |
| 255-0 mb above ground         | CIN    | Convective Inhibition [J/kg]                        |
| 255-0 mb above ground         | PLPL   | Pressure of level from which parcel was lifted [Pa] |
| surface                       | LAND   | Land Cover (0=sea, 1=land) [Proportion]             |
| surface                       | ICEC   | Ice Cover [Proportion]                              |
| surface                       | ALBDO  | Albedo [%]  |
| surface                       | ICETMP | Ice Temperature [K]                                 |
| PV=2e-06 (Km^2/kg/s) surface  | UGRD   | U-Component of Wind [m/s]                           |
| PV=2e-06 (Km^2/kg/s) surface  | VGRD   | V-Component of Wind [m/s]                           |
| PV=2e-06 (Km^2/kg/s) surface  | TMP    | Temperature [K]                                     |
| PV=2e-06 (Km^2/kg/s) surface  | HGT    | Geopotential Height [gpm]                           |
| PV=2e-06 (Km^2/kg/s) surface  | PRES   | Pressure [Pa]                                       |
| PV=2e-06 (Km^2/kg/s) surface  | VWSH   | Vertical Speed Shear [1/s]                          |
| PV=-2e-06 (Km^2/kg/s) surface | UGRD   | U-Component of Wind [m/s]                           |
| PV=-2e-06 (Km^2/kg/s) surface | VGRD   | V-Component of Wind [m/s]                           |
| PV=-2e-06 (Km^2/kg/s) surface | TMP    | Temperature [K]                                     |
| PV=-2e-06 (Km^2/kg/s) surface | HGT    | Geopotential Height [gpm]                           |
| PV=-2e-06 (Km^2/kg/s) surface | PRES   | Pressure [Pa]                                       |
| PV=-2e-06 (Km^2/kg/s) surface | VWSH   | Vertical Speed Shear [1/s]                          |
|                               |        |   |

## Климатические данные

Предоставляет климатические данные с дискретностью по времени один час с 1979 года по настоящее время.

### Технические характеристики модели

|                       |  |
|-----------------------|--|
| Data type             | Gridded  |
| Projection            | Regular latitude-longitude grid  |
| Horizontal coverage   | Global   |
| Horizontal resolution | Reanalysis: $0.25^\circ \times 0.25^\circ$ (atmosphere), $0.5^\circ \times 0.5^\circ$ (ocean waves)<br>Mean, spread and members: $0.5^\circ \times 0.5^\circ$ (atmosphere), $1^\circ \times 1^\circ$ (ocean waves) |
| Temporal coverage     | 1979 to present  |
| Temporal resolution   | Hourly   |
| File format           | GRIB   |
| Update frequency      | Daily  |

### Описание параметров

| Name   | Units                 |
|--|-----------------------|
| 100m u-component of wind                     | m s-1                 |
| 100m v-component of wind                     | m s-1                 |
| 10m u-component of neutral wind              | m s-1                 |
| 10m u-component of wind                      | m s-1                 |
| 10m v-component of neutral wind              | m s-1                 |
| 10m v-component of wind                      | m s-1                 |
| 10m wind gust since previous post-processing | m s-1                 |
| 2m dewpoint temperature                      | K                     |
| 2m temperature                               | K                     |
| Air density over the oceans                  | kg m-3                |
| Angle of sub-gridscale orography             | radians               |
| Anisotropy of sub-gridscale orography        | Dimensionless         |
| Benjamin-feir index                          | Dimensionless         |
| Boundary layer dissipation                   | J m-2                 |
| Boundary layer height                        | m                     |
| Charnock                                     | Dimensionless         |
| Clear-sky direct solar radiation at surface  | J m-2                 |
| Cloud base height                            | m                     |
| Coefficient of drag with waves               | Dimensionless         |
| Convective available potential energy        | J kg-1                |
| Convective inhibition                        | J kg-1                |
| Convective precipitation                     | m                     |
| Convective rain rate                         | kg m-2 s-1            |
| Convective snowfall                          | m of water equivalent |
| Convective snowfall rate water equivalent    | kg m-2 s-1            |
| Downward UV radiation at the surface         | J m-2                 |

|  |                       |
|--|-----------------------|
| Duct base height   | m                     |
| Eastward gravity wave surface stress                     | N m-2 s               |
| Eastward turbulent surface stress                        | N m-2 s               |
| Evaporation  | m of water equivalent |
| Forecast albedo  | Dimensionless         |
| Forecast logarithm of surface roughness for heat         | Dimensionless         |
| Forecast surface roughness                               | m                     |
| Free convective velocity over the oceans                 | m s-1                 |
| Friction velocity  | m s-1                 |
| Geopotential   | m2 s-2                |
| Gravity wave dissipation                                 | J m-2                 |
| High cloud cover   | Dimensionless         |
| High vegetation cover                                    | Dimensionless         |
| Ice temperature layer 1                                  | K                     |
| Ice temperature layer 2                                  | K                     |
| Ice temperature layer 3                                  | K                     |
| Ice temperature layer 4                                  | K                     |
| Instantaneous 10m wind gust                              | m s-1                 |
| Instantaneous eastward turbulent surface stress          | N m-2                 |
| Instantaneous large-scale surface precipitation fraction | Dimensionless         |
| Instantaneous moisture flux                              | kg m-2 s-1            |
| Instantaneous northward turbulent surface stress         | N m-2                 |
| Instantaneous surface sensible heat flux                 | W m-2                 |
| K index  | K                     |
| Lake bottom temperature                                  | K                     |
| Lake cover   | Dimensionless         |
| Lake depth   | m                     |
| Lake ice depth   | m                     |
| Lake ice temperature                                     | K                     |
| Lake mix-layer depth                                     | m                     |
| Lake mix-layer temperature                               | K                     |
| Lake shape factor  | Dimensionless         |
| Lake total layer temperature                             | K                     |
| Land-sea mask  | Dimensionless         |
| Large scale rain rate                                    | kg m-2 s-1            |
| Large scale snowfall rate water equivalent               | kg m-2 s-1            |
| Large-scale precipitation                                | m                     |
| Large-scale precipitation fraction                       | s                     |
| Large-scale snowfall                                     | m of water equivalent |
| Leaf area index, high vegetation                         | m2 m-2                |
| Leaf area index, low vegetation                          | m2 m-2                |
| Low cloud cover  | Dimensionless         |
| Low vegetation cover                                     | Dimensionless         |

|   |               |
|---|---------------|
| Maximum 2m temperature since previous post-processing           | K             |
| Maximum individual wave height                                  | m             |
| Maximum total precipitation rate since previous post-processing | kg m-2 s-1    |
| Mean boundary layer dissipation                                 | W m-2         |
| Mean convective precipitation rate                              | kg m-2 s-1    |
| Mean convective snowfall rate                                   | kg m-2 s-1    |
| Mean direction of total swell                                   | degrees       |
| Mean direction of wind waves                                    | degrees       |
| Mean eastward gravity wave surface stress                       | N m-2         |
| Mean eastward turbulent surface stress                          | N m-2         |
| Mean evaporation rate   | kg m-2 s-1    |
| Mean gravity wave dissipation                                   | W m-2         |
| Mean large-scale precipitation fraction                         | Dimensionless |
| Mean large-scale precipitation rate                             | kg m-2 s-1    |
| Mean large-scale snowfall rate                                  | kg m-2 s-1    |
| Mean northward gravity wave surface stress                      | N m-2         |
| Mean northward turbulent surface stress                         | N m-2         |
| Mean period of total swell                                      | s             |
| Mean period of wind waves                                       | s             |
| Mean potential evaporation rate                                 | kg m-2 s-1    |
| Mean runoff rate  | kg m-2 s-1    |
| Mean sea level pressure   | Pa            |
| Mean snow evaporation rate                                      | kg m-2 s-1    |
| Mean snowfall rate  | kg m-2 s-1    |
| Mean snowmelt rate  | kg m-2 s-1    |
| Mean square slope of waves                                      | Dimensionless |
| Mean sub-surface runoff rate                                    | kg m-2 s-1    |
| Mean surface direct short-wave radiation flux                   | W m-2         |
| Mean surface direct short-wave radiation flux, clear sky        | W m-2         |
| Mean surface downward UV radiation flux                         | W m-2         |
| Mean surface downward long-wave radiation flux                  | W m-2         |
| Mean surface downward long-wave radiation flux, clear sky       | W m-2         |
| Mean surface downward short-wave radiation flux                 | W m-2         |
| Mean surface downward short-wave radiation flux, clear sky      | W m-2         |
| Mean surface latent heat flux                                   | W m-2         |
| Mean surface net long-wave radiation flux                       | W m-2         |

|   |               |
|---|---------------|
| Mean surface net long-wave radiation flux, clear sky            | W m-2         |
| Mean surface net short-wave radiation flux                      | W m-2         |
| Mean surface net short-wave radiation flux, clear sky           | W m-2         |
| Mean surface runoff rate  | kg m-2 s-1    |
| Mean surface sensible heat flux                                 | W m-2         |
| Mean top downward short-wave radiation flux                     | W m-2         |
| Mean top net long-wave radiation flux                           | W m-2         |
| Mean top net long-wave radiation flux, clear sky                | W m-2         |
| Mean top net short-wave radiation flux                          | W m-2         |
| Mean top net short-wave radiation flux, clear sky               | W m-2         |
| Mean total precipitation rate                                   | kg m-2 s-1    |
| Mean vertical gradient of refractivity inside trapping layer    | m-1           |
| Mean vertically integrated moisture divergence                  | kg m-2 s-1    |
| Mean wave direction   | degree true   |
| Mean wave direction of first swell partition                    | degrees       |
| Mean wave direction of second swell partition                   | degrees       |
| Mean wave direction of third swell partition                    | degrees       |
| Mean wave period  | s             |
| Mean wave period based on first moment                          | s             |
| Mean wave period based on first moment for swell                | s             |
| Mean wave period based on first moment for wind waves           | s             |
| Mean wave period based on second moment for swell               | s             |
| Mean wave period based on second moment for wind waves          | s             |
| Mean wave period of first swell partition                       | s             |
| Mean wave period of second swell partition                      | s             |
| Mean wave period of third swell partition                       | s             |
| Mean zero-crossing wave period                                  | s             |
| Medium cloud cover  | Dimensionless |
| Minimum 2m temperature since previous post-processing           | K             |
| Minimum total precipitation rate since previous post-processing | kg m-2 s-1    |
| Minimum vertical gradient of refractivity inside trapping layer | m-1           |

|  |                       |
|--|-----------------------|
| Model bathymetry   | m                     |
| Near IR albedo for diffuse radiation                       | Dimensionless         |
| Near IR albedo for direct radiation                        | Dimensionless         |
| Normalized energy flux into ocean                          | Dimensionless         |
| Normalized energy flux into waves                          | Dimensionless         |
| Normalized stress into ocean                               | Dimensionless         |
| Northward gravity wave surface stress                      | N m-2 s               |
| Northward turbulent surface stress                         | N m-2 s               |
| Ocean surface stress equivalent 10m neutral wind direction | degrees               |
| Ocean surface stress equivalent 10m neutral wind speed     | m s-1                 |
| Peak wave period   | s                     |
| Period corresponding to maximum individual wave height     | s                     |
| Potential evaporation                                      | m                     |
| Precipitation type   | Dimensionless         |
| Runoff   | m                     |
| Sea surface temperature                                    | K                     |
| Sea-ice cover  | Dimensionless         |
| Significant height of combined wind waves and swell        | m                     |
| Significant height of total swell                          | m                     |
| Significant height of wind waves                           | m                     |
| Significant wave height of first swell partition           | m                     |
| Significant wave height of second swell partition          | m                     |
| Significant wave height of third swell partition           | m                     |
| Skin reservoir content                                     | m of water equivalent |
| Skin temperature   | K                     |
| Slope of sub-gridscale orography                           | Dimensionless         |
| Snow albedo  | Dimensionless         |
| Snow density   | kg m-3                |
| Snow depth   | m of water equivalent |
| Snow evaporation   | m of water equivalent |
| Snowfall   | m of water equivalent |
| Snowmelt   | m of water equivalent |
| Soil temperature level 1                                   | K                     |
| Soil temperature level 2                                   | K                     |
| Soil temperature level 3                                   | K                     |
| Soil temperature level 4                                   | K                     |
| Soil type  | Dimensionless         |
| Standard deviation of filtered subgrid orography           | m                     |
| Standard deviation of orography                            | Dimensionless         |

|  |               |
|--|---------------|
| Sub-surface runoff   | m             |
| Surface latent heat flux                                   | J m-2         |
| Surface net solar radiation                                | J m-2         |
| Surface net solar radiation, clear sky                     | J m-2         |
| Surface net thermal radiation                              | J m-2         |
| Surface net thermal radiation, clear sky                   | J m-2         |
| Surface pressure   | Pa            |
| Surface runoff   | m             |
| Surface sensible heat flux                                 | J m-2         |
| Surface solar radiation downward, clear sky                | J m-2         |
| Surface solar radiation downwards                          | J m-2         |
| Surface thermal radiation downward, clear sky              | J m-2         |
| Surface thermal radiation downwards                        | J m-2         |
| TOA incident solar radiation                               | J m-2         |
| Temperature of snow layer                                  | K             |
| Top net solar radiation                                    | J m-2         |
| Top net solar radiation, clear sky                         | J m-2         |
| Top net thermal radiation                                  | J m-2         |
| Top net thermal radiation, clear sky                       | J m-2         |
| Total cloud cover  | Dimensionless |
| Total column cloud ice water                               | kg m-2        |
| Total column cloud liquid water                            | kg m-2        |
| Total column ozone   | kg m-2        |
| Total column rain water                                    | kg m-2        |
| Total column snow water                                    | kg m-2        |
| Total column supercooled liquid water                      | kg m-2        |
| Total column water   | kg m-2        |
| Total column water vapour                                  | kg m-2        |
| Total precipitation  | m             |
| Total sky direct solar radiation at surface                | J m-2         |
| Total totals index   | K             |
| Trapping layer base height                                 | m             |
| Trapping layer top height                                  | m             |
| Type of high vegetation                                    | Dimensionless |
| Type of low vegetation                                     | Dimensionless |
| U-component stokes drift                                   | m s-1         |
| UV visible albedo for diffuse radiation                    | Dimensionless |
| UV visible albedo for direct radiation                     | Dimensionless |
| V-component stokes drift                                   | m s-1         |
| Vertical integral of divergence of cloud frozen water flux | kg m-2 s-1    |
| Vertical integral of divergence of cloud liquid water flux | kg m-2 s-1    |
| Vertical integral of divergence of geopotential flux       | W m-2         |

|  |            |
|--|------------|
| Vertical integral of divergence of kinetic energy flux | W m-2      |
| Vertical integral of divergence of mass flux           | kg m-2 s-1 |
| Vertical integral of divergence of moisture flux       | kg m-2 s-1 |
| Vertical integral of divergence of ozone flux          | kg m-2 s-1 |
| Vertical integral of divergence of thermal energy flux | W m-2      |
| Vertical integral of divergence of total energy flux   | W m-2      |
| Vertical integral of eastward cloud frozen water flux  | kg m-1 s-1 |
| Vertical integral of eastward cloud liquid water flux  | kg m-1 s-1 |
| Vertical integral of eastward geopotential flux        | W m-1      |
| Vertical integral of eastward heat flux                | W m-1      |
| Vertical integral of eastward kinetic energy flux      | W m-1      |
| Vertical integral of eastward mass flux                | kg m-1 s-1 |
| Vertical integral of eastward ozone flux               | kg m-1 s-1 |
| Vertical integral of eastward total energy flux        | W m-1      |
| Vertical integral of eastward water vapour flux        | kg m-1 s-1 |
| Vertical integral of energy conversion                 | W m-2      |
| Vertical integral of kinetic energy                    | J m-2      |
| Vertical integral of mass of atmosphere                | kg m-2     |
| Vertical integral of mass tendency                     | kg m-2 s-1 |
| Vertical integral of northward cloud frozen water flux | kg m-1 s-1 |
| Vertical integral of northward cloud liquid water flux | kg m-1 s-1 |
| Vertical integral of northward geopotential flux       | W m-1      |
| Vertical integral of northward heat flux               | W m-1      |
| Vertical integral of northward kinetic energy flux     | W m-1      |
| Vertical integral of northward mass flux               | kg m-1 s-1 |
| Vertical integral of northward ozone flux              | kg m-1 s-1 |
| Vertical integral of northward total energy flux       | W m-1      |
| Vertical integral of northward water vapour flux       | kg m-1 s-1 |
| Vertical integral of potential and internal energy     | J m-2      |

|  |               |
|--|---------------|
| Vertical integral of potential, internal and latent energy | J m-2         |
| Vertical integral of temperature                           | K kg m-2      |
| Vertical integral of thermal energy                        | J m-2         |
| Vertical integral of total energy                          | J m-2         |
| Vertically integrated moisture divergence                  | kg m-2        |
| Volumetric soil water layer 1                              | m3 m-3        |
| Volumetric soil water layer 2                              | m3 m-3        |
| Volumetric soil water layer 3                              | m3 m-3        |
| Volumetric soil water layer 4                              | m3 m-3        |
| Wave spectral directional width                            | Dimensionless |
| Wave spectral directional width for swell                  | Dimensionless |
| Wave spectral directional width for wind waves             | Dimensionless |
| Wave spectral kurtosis                                     | Dimensionless |
| Wave spectral peakedness                                   | Dimensionless |
| Wave spectral skewness                                     | Dimensionless |
| Zero degree level  | m             |

## Прогнозы состояния атмосферы

Предоставляет прогнозы данные состояния атмосферы. Прогнозы включают более 50 химических веществ (например, озон, двуокись азота, двуокись углерода) и семь различных типов аэрозолей (пустынная пыль, морская соль, органические вещества, черный углерод, сульфаты, нитраты и аэрозоли аммония). Кроме того, доступны несколько метеорологических переменных.

### Технические характеристики модели

|                       |   |
|-----------------------|---|
| Data type             | Gridded   |
| Horizontal coverage   | Global  |
| Horizontal resolution | 0.4°x0.4°   |
| Vertical coverage     | Surface, total column, model levels and pressure levels.  |
| Vertical resolution   | 60 model levels before July 7 2019 00UTC, then 137 model levels. Pressure levels: 1000, 950, 925, 900, 850, 800, 700, 600, 500, 400, 300, 250, 200, 150, 100, 70, 50, 30, 20, 10, 7, 5, 3, 2, 1 hPa |
| Temporal coverage     | 2015 to present   |
| Temporal resolution   | 1-hourly (single-level), 3-hourly (multi-level)   |
| File format           | GRIB (optional conversion to netCDF)  |
| Versions              | Only one version, but with occasional model upgrades  |
| Update frequency      | New 00UTC and 12UTC forecasts added each day. Model upgrades made approximately once a year   |

### Описание параметров

| Name                                      | Units               |
|---|---------------------|
| 10m u-component of wind                   | m s <sup>-1</sup>   |
| 10m v-component of wind                   | m s <sup>-1</sup>   |
| 10m wind gust in the last 3 hours         | m s <sup>-1</sup>   |
| 2m dewpoint temperature                   | K                   |
| 2m temperature                            | K                   |
| Acetone                                   | kg kg <sup>-1</sup> |
| Acetone product                           | kg kg <sup>-1</sup> |
| Aerosol extinction coefficient at 1064 nm | m <sup>-1</sup>     |
| Aerosol extinction coefficient at 355 nm  | m <sup>-1</sup>     |
| Aerosol extinction coefficient at 532 nm  | m <sup>-1</sup>     |
| Aldehydes                                 | kg kg <sup>-1</sup> |
| Amine                                     | kg kg <sup>-1</sup> |
| Ammonia                                   | kg kg <sup>-1</sup> |
| Ammonium                                  | kg kg <sup>-1</sup> |
| Ammonium aerosol mass mixing ratio        | kg kg <sup>-1</sup> |
| Ammonium aerosol optical depth at 550 nm  | dimensionless       |
| Asymmetry factor at 1020 nm               | dimensionless       |
| Asymmetry factor at 1064 nm               | dimensionless       |
| Asymmetry factor at 1240 nm               | dimensionless       |

|   |               |
|---|---------------|
| Asymmetry factor at 1640 nm   | dimensionless |
| Asymmetry factor at 2130 nm   | dimensionless |
| Asymmetry factor at 340 nm  | dimensionless |
| Asymmetry factor at 355 nm  | dimensionless |
| Asymmetry factor at 380 nm  | dimensionless |
| Asymmetry factor at 400 nm  | dimensionless |
| Asymmetry factor at 440 nm  | dimensionless |
| Asymmetry factor at 469 nm  | dimensionless |
| Asymmetry factor at 500 nm  | dimensionless |
| Asymmetry factor at 532 nm  | dimensionless |
| Asymmetry factor at 550 nm  | dimensionless |
| Asymmetry factor at 645 nm  | dimensionless |
| Asymmetry factor at 670 nm  | dimensionless |
| Asymmetry factor at 800 nm  | dimensionless |
| Asymmetry factor at 858 nm  | dimensionless |
| Asymmetry factor at 865 nm  | dimensionless |
| Attenuated backscatter due to aerosol at 1064 nm (from ground)            | m-1 sr-1      |
| Attenuated backscatter due to aerosol at 1064 nm (from top of atmosphere) | m-1 sr-1      |
| Attenuated backscatter due to aerosol at 355 nm (from ground)             | m-1 sr-1      |
| Attenuated backscatter due to aerosol at 355 nm (from top of atmosphere)  | m-1 sr-1      |
| Attenuated backscatter due to aerosol at 532 nm (from ground)             | m-1 sr-1      |
| Attenuated backscatter due to aerosol at 532 nm (from top of atmosphere)  | m-1 sr-1      |
| Black carbon aerosol optical depth at 550 nm                              | dimensionless |
| Boundary layer height   | m             |
| Carbon monoxide   | kg kg-1       |
| Clear sky surface photosynthetically active radiation                     | J m-2         |
| Clear-sky direct solar radiation at surface                               | J m-2         |
| Cloud base height   | m             |
| Convective available potential energy                                     | J kg-1        |
| Convective inhibition   | J kg-1        |
| Convective precipitation  | m             |
| Dimethyl sulfide  | kg kg-1       |
| Dinitrogen pentoxide  | kg kg-1       |
| Direct solar radiation  | J m-2         |
| Downward UV radiation at the surface                                      | J m-2         |
| Dry deposition of ammonium aerosol  | kg m-2 s-1    |

|  |                       |
|--|-----------------------|
| Dry deposition of coarse-mode nitrate aerosol              | kg m-2 s-1            |
| Dry deposition of dust aerosol (0.03 - 0.55 µm)            | kg m-2 s-1            |
| Dry deposition of dust aerosol (0.55 - 9 µm)               | kg m-2 s-1            |
| Dry deposition of dust aerosol (9 - 20 µm)                 | kg m-2 s-1            |
| Dry deposition of fine-mode nitrate aerosol                | kg m-2 s-1            |
| Dry deposition of hydrophilic black carbon aerosol         | kg m-2 s-1            |
| Dry deposition of hydrophilic organic matter aerosol       | kg m-2 s-1            |
| Dry deposition of hydrophobic black carbon aerosol         | kg m-2 s-1            |
| Dry deposition of hydrophobic organic matter aerosol       | kg m-2 s-1            |
| Dry deposition of sea salt aerosol (0.03 - 0.5 µm)         | kg m-2 s-1            |
| Dry deposition of sea salt aerosol (0.5 - 5 µm)            | kg m-2 s-1            |
| Dry deposition of sea salt aerosol (5 - 20 µm)             | kg m-2 s-1            |
| Dry deposition of sulphate aerosol                         | kg m-2 s-1            |
| Dust aerosol (0.03 - 0.55 µm) mixing ratio                 | kg kg-1               |
| Dust aerosol (0.03 - 0.55 µm) optical depth at 550 nm      | dimensionless         |
| Dust aerosol (0.55 - 0.9 µm) mixing ratio                  | kg kg-1               |
| Dust aerosol (0.55 - 9 µm) optical depth at 550 nm         | dimensionless         |
| Dust aerosol (0.9 - 20 µm) mixing ratio                    | kg kg-1               |
| Dust aerosol (9 - 20 µm) optical depth at 550 nm           | dimensionless         |
| Dust aerosol optical depth at 550 nm                       | dimensionless         |
| Ethane   | kg kg-1               |
| Ethanol  | kg kg-1               |
| Ethene   | kg kg-1               |
| Evaporation  | m of water equivalent |
| Forecast albedo  | (0 - 1)               |
| Formaldehyde   | kg kg-1               |
| Formic acid  | kg kg-1               |
| Fraction of cloud cover                                    | (0 - 1)               |
| Friction velocity  | m s-1                 |
| Geopotential   | m2 s-2                |
| Height of convective cloud top                             | m                     |
| High cloud cover   | (0 - 1)               |
| Hydrogen peroxide  | kg kg-1               |
| Hydroperoxy radical  | kg kg-1               |
| Hydrophilic black carbon aerosol mixing ratio              | kg kg-1               |
| Hydrophilic black carbon aerosol optical depth at 550 nm   | dimensionless         |
| Hydrophilic organic matter aerosol mixing ratio            | kg kg-1               |
| Hydrophilic organic matter aerosol optical depth at 550 nm | dimensionless         |

|  |               |
|--|---------------|
| Hydrophobic black carbon aerosol mixing ratio              | kg kg-1       |
| Hydrophobic black carbon aerosol optical depth at 550 nm   | dimensionless |
| Hydrophobic organic matter aerosol mixing ratio            | kg kg-1       |
| Hydrophobic organic matter aerosol optical depth at 550 nm | dimensionless |
| Hydroxyl radical   | kg kg-1       |
| Isoprene   | kg kg-1       |
| Lake cover   | (0 - 1)       |
| Land-sea mask  | (0 - 1)       |
| Large-scale precipitation                                  | m             |
| Lead   | kg kg-1       |
| Leaf area index, high vegetation                           | m2 m-2        |
| Leaf area index, low vegetation                            | m2 m-2        |
| Low cloud cover  | (0 - 1)       |
| Mean sea level pressure                                    | Pa            |
| Medium cloud cover   | (0 - 1)       |
| Methacrolein MVK   | kg kg-1       |
| Methacrylic acid   | kg kg-1       |
| Methane  | kg kg-1       |
| Methane sulfonic acid                                      | kg kg-1       |
| Methanol   | kg kg-1       |
| Methyl glyoxal   | kg kg-1       |
| Methyl peroxide  | kg kg-1       |
| Methylperoxy radical                                       | kg kg-1       |
| Nitrate  | kg kg-1       |
| Nitrate aerosol optical depth at 550 nm                    | dimensionless |
| Nitrate coarse mode aerosol mass mixing ratio              | kg kg-1       |
| Nitrate coarse-mode aerosol optical depth at 550 nm        | dimensionless |
| Nitrate fine mode aerosol mass mixing ratio                | kg kg-1       |
| Nitrate fine-mode aerosol optical depth at 550 nm          | dimensionless |
| Nitrate radical  | kg kg-1       |
| Nitric acid  | kg kg-1       |
| Nitrogen dioxide   | kg kg-1       |
| Nitrogen monoxide  | kg kg-1       |
| Olefins  | kg kg-1       |
| Organic ethers   | kg kg-1       |
| Organic matter aerosol optical depth at 550 nm             | dimensionless |
| Organic nitrates   | kg kg-1       |
| Ozone  | kg kg-1       |

|  |               |
|--|---------------|
| Paraffins  | kg kg-1       |
| Particulate matter d < 1 µm (PM1)                        | kg m-3        |
| Particulate matter d < 10 µm (PM10)                      | kg m-3        |
| Particulate matter d < 2.5 µm (PM2.5)                    | kg m-3        |
| Pernitric acid   | kg kg-1       |
| Peroxides  | kg kg-1       |
| Peroxy acetyl radical                                    | kg kg-1       |
| Peroxyacetyl nitrate                                     | kg kg-1       |
| Photosynthetically active radiation at the surface       | J m-2         |
| Potential evaporation                                    | m             |
| Potential vorticity                                      | K m2 kg-1 s-1 |
| Precipitation type                                       | dimensionless |
| Propane  | kg kg-1       |
| Propene  | kg kg-1       |
| Radon  | kg kg-1       |
| Relative humidity  | %             |
| Sea salt aerosol (0.03 - 0.5 µm) mixing ratio            | kg kg-1       |
| Sea salt aerosol (0.03 - 0.5 µm) optical depth at 550 nm | dimensionless |
| Sea salt aerosol (0.5 - 5 µm) mixing ratio               | kg kg-1       |
| Sea salt aerosol (0.5 - 5 µm) optical depth at 550 nm    | dimensionless |
| Sea salt aerosol (5 - 20 µm) mixing ratio                | kg kg-1       |
| Sea salt aerosol (5 - 20 µm) optical depth at 550 nm     | dimensionless |
| Sea salt aerosol optical depth at 550 nm                 | dimensionless |
| Sea surface temperature                                  | K             |
| Sea-ice cover  | (0 - 1)       |
| Sedimentation of ammonium aerosol                        | kg m-2 s-1    |
| Sedimentation of coarse-mode nitrate aerosol             | kg m-2 s-1    |
| Sedimentation of dust aerosol (0.03 - 0.55 µm)           | kg m-2 s-1    |
| Sedimentation of dust aerosol (0.55 - 9 µm)              | kg m-2 s-1    |
| Sedimentation of dust aerosol (9 - 20 µm)                | kg m-2 s-1    |
| Sedimentation of fine-mode nitrate aerosol               | kg m-2 s-1    |
| Sedimentation of hydrophilic black carbon aerosol        | kg m-2 s-1    |
| Sedimentation of hydrophilic organic matter aerosol      | kg m-2 s-1    |
| Sedimentation of hydrophobic black carbon aerosol        | kg m-2 s-1    |
| Sedimentation of hydrophobic organic matter aerosol      | kg m-2 s-1    |
| Sedimentation of sea salt aerosol (0.03 - 0.5 µm)        | kg m-2 s-1    |
| Sedimentation of sea salt aerosol (0.5 - 5 µm)           | kg m-2 s-1    |
| Sedimentation of sea salt aerosol (5 - 20 µm)            | kg m-2 s-1    |

|   |                       |
|---|-----------------------|
| Sedimentation of sulphate aerosol                           | kg m-2 s-1            |
| Single scattering albedo at 1020 nm                         | (0 - 1)               |
| Single scattering albedo at 1064 nm                         | (0 - 1)               |
| Single scattering albedo at 1240 nm                         | (0 - 1)               |
| Single scattering albedo at 1640 nm                         | (0 - 1)               |
| Single scattering albedo at 2130 nm                         | (0 - 1)               |
| Single scattering albedo at 340 nm                          | (0 - 1)               |
| Single scattering albedo at 355 nm                          | (0 - 1)               |
| Single scattering albedo at 380 nm                          | (0 - 1)               |
| Single scattering albedo at 400 nm                          | (0 - 1)               |
| Single scattering albedo at 440 nm                          | (0 - 1)               |
| Single scattering albedo at 469 nm                          | (0 - 1)               |
| Single scattering albedo at 500 nm                          | (0 - 1)               |
| Single scattering albedo at 532 nm                          | (0 - 1)               |
| Single scattering albedo at 550 nm                          | (0 - 1)               |
| Single scattering albedo at 645 nm                          | (0 - 1)               |
| Single scattering albedo at 670 nm                          | (0 - 1)               |
| Single scattering albedo at 800 nm                          | (0 - 1)               |
| Single scattering albedo at 858 nm                          | (0 - 1)               |
| Single scattering albedo at 865 nm                          | (0 - 1)               |
| Skin reservoir content                                      | m of water equivalent |
| Skin temperature  | K                     |
| Snow albedo   | (0 - 1)               |
| Snow depth  | m of water equivalent |
| Source/gain of ammonium aerosol                             | kg m-2 s-1            |
| Source/gain of coarse-mode nitrate aerosol                  | kg m-2 s-1            |
| Source/gain of dust aerosol (0.03 - 0.55 $\mu\text{m}$ )    | kg m-2 s-1            |
| Source/gain of dust aerosol (0.55 - 9 $\mu\text{m}$ )       | kg m-2 s-1            |
| Source/gain of dust aerosol (9 - 20 $\mu\text{m}$ )         | kg m-2 s-1            |
| Source/gain of fine-mode nitrate aerosol                    | kg m-2 s-1            |
| Source/gain of hydrophilic black carbon aerosol             | kg m-2 s-1            |
| Source/gain of hydrophilic organic matter aerosol           | kg m-2 s-1            |
| Source/gain of hydrophobic black carbon aerosol             | kg m-2 s-1            |
| Source/gain of hydrophobic organic matter aerosol           | kg m-2 s-1            |
| Source/gain of sea salt aerosol (0.03 - 0.5 $\mu\text{m}$ ) | kg m-2 s-1            |
| Source/gain of sea salt aerosol (0.5 - 5 $\mu\text{m}$ )    | kg m-2 s-1            |
| Source/gain of sea salt aerosol (5 - 20 $\mu\text{m}$ )     | kg m-2 s-1            |
| Source/gain of sulphate aerosol                             | kg m-2 s-1            |

|   |               |
|---|---------------|
| Specific cloud ice water content                  | kg kg-1       |
| Specific cloud liquid water content               | kg kg-1       |
| Specific humidity                                 | kg kg-1       |
| Specific rain water content                       | kg kg-1       |
| Specific snow water content                       | kg kg-1       |
| Stratospheric ozone tracer                        | kg kg-1       |
| Sulphate aerosol mixing ratio                     | kg kg-1       |
| Sulphate aerosol optical depth at 550 nm          | dimensionless |
| Sulphur dioxide                                   | kg kg-1       |
| Sunshine duration                                 | s             |
| Surface Geopotential                              | m2 s-2        |
| Surface latent heat flux                          | J m-2         |
| Surface net solar radiation                       | J m-2         |
| Surface net solar radiation, clear sky            | J m-2         |
| Surface net thermal radiation                     | J m-2         |
| Surface net thermal radiation, clear sky          | J m-2         |
| Surface pressure                                  | Pa            |
| Surface sensible heat flux                        | J m-2         |
| Surface solar radiation downward, clear sky       | J m-2         |
| Surface solar radiation downwards                 | J m-2         |
| Surface thermal radiation downward, clear sky     | J m-2         |
| Surface thermal radiation downwards               | J m-2         |
| TOA incident solar radiation                      | J m-2         |
| Temperature                                       | K             |
| Terpenes  | kg kg-1       |
| Top net solar radiation                           | J m-2         |
| Top net solar radiation, clear sky                | J m-2         |
| Top net thermal radiation                         | J m-2         |
| Top net thermal radiation, clear sky              | J m-2         |
| Total absorption aerosol optical depth at 1020 nm | dimensionless |
| Total absorption aerosol optical depth at 1064 nm | dimensionless |
| Total absorption aerosol optical depth at 1240 nm | dimensionless |
| Total absorption aerosol optical depth at 1640 nm | dimensionless |
| Total absorption aerosol optical depth at 2130 nm | dimensionless |
| Total absorption aerosol optical depth at 340 nm  | dimensionless |
| Total absorption aerosol optical depth at 355 nm  | dimensionless |
| Total absorption aerosol optical depth at 380 nm  | dimensionless |
| Total absorption aerosol optical depth at 400 nm  | dimensionless |

|  |               |
|--|---------------|
| Total absorption aerosol optical depth at 440 nm | dimensionless |
| Total absorption aerosol optical depth at 469 nm | dimensionless |
| Total absorption aerosol optical depth at 500 nm | dimensionless |
| Total absorption aerosol optical depth at 532 nm | dimensionless |
| Total absorption aerosol optical depth at 550 nm | dimensionless |
| Total absorption aerosol optical depth at 645 nm | dimensionless |
| Total absorption aerosol optical depth at 670 nm | dimensionless |
| Total absorption aerosol optical depth at 800 nm | dimensionless |
| Total absorption aerosol optical depth at 858 nm | dimensionless |
| Total absorption aerosol optical depth at 865 nm | dimensionless |
| Total aerosol optical depth at 1020 nm           | dimensionless |
| Total aerosol optical depth at 1064 nm           | dimensionless |
| Total aerosol optical depth at 1240 nm           | dimensionless |
| Total aerosol optical depth at 1640 nm           | dimensionless |
| Total aerosol optical depth at 2130 nm           | dimensionless |
| Total aerosol optical depth at 340 nm            | dimensionless |
| Total aerosol optical depth at 355 nm            | dimensionless |
| Total aerosol optical depth at 380 nm            | dimensionless |
| Total aerosol optical depth at 400 nm            | dimensionless |
| Total aerosol optical depth at 440 nm            | dimensionless |
| Total aerosol optical depth at 469 nm            | dimensionless |
| Total aerosol optical depth at 500 nm            | dimensionless |
| Total aerosol optical depth at 532 nm            | dimensionless |
| Total aerosol optical depth at 550 nm            | dimensionless |
| Total aerosol optical depth at 645 nm            | dimensionless |
| Total aerosol optical depth at 670 nm            | dimensionless |
| Total aerosol optical depth at 800 nm            | dimensionless |
| Total aerosol optical depth at 858 nm            | dimensionless |
| Total aerosol optical depth at 865 nm            | dimensionless |
| Total cloud cover                                | (0 - 1)       |
| Total column HYPROPO2                            | kg m-2        |
| Total column IC3H7O2                             | kg m-2        |
| Total column NO to NO2 operator                  | kg m-2        |
| Total column NO to alkyl nitrate operator        | kg m-2        |
| Total column acetone                             | kg m-2        |
| Total column acetone product                     | kg m-2        |
| Total column aldehydes                           | kg m-2        |
| Total column amine                               | kg m-2        |

|                                     |        |
|-------------------------------------|--------|
| Total column ammonia                | kg m-2 |
| Total column ammonium               | kg m-2 |
| Total column carbon monoxide        | kg m-2 |
| Total column cloud ice water        | kg m-2 |
| Total column cloud liquid water     | kg m-2 |
| Total column dimethyl sulfide       | kg m-2 |
| Total column dinitrogen pentoxide   | kg m-2 |
| Total column ethane                 | kg m-2 |
| Total column ethanol                | kg m-2 |
| Total column ethene                 | kg m-2 |
| Total column formaldehyde           | kg m-2 |
| Total column formic acid            | kg m-2 |
| Total column hydrogen peroxide      | kg m-2 |
| Total column hydroperoxy radical    | kg m-2 |
| Total column hydroxyl radical       | kg m-2 |
| Total column isoprene               | kg m-2 |
| Total column lead                   | kg m-2 |
| Total column methacrolein MVK       | kg m-2 |
| Total column methacrylic acid       | kg m-2 |
| Total column methane                | kg m-2 |
| Total column methane sulfonic acid  | kg m-2 |
| Total column methanol               | kg m-2 |
| Total column methyl glyoxal         | kg m-2 |
| Total column methyl peroxide        | kg m-2 |
| Total column methylperoxy radical   | kg m-2 |
| Total column nitrate                | kg m-2 |
| Total column nitrate radical        | kg m-2 |
| Total column nitric acid            | kg m-2 |
| Total column nitrogen dioxide       | kg m-2 |
| Total column nitrogen monoxide      | kg m-2 |
| Total column nitrogen oxides transp | kg m-2 |
| Total column olefins                | kg m-2 |
| Total column organic ethers         | kg m-2 |
| Total column organic nitrates       | kg m-2 |
| Total column ozone                  | kg m-2 |
| Total column paraffins              | kg m-2 |
| Total column pernitric acid         | kg m-2 |
| Total column peroxides              | kg m-2 |

|  |               |
|--|---------------|
| Total column peroxy acetyl radical   | kg m-2        |
| Total column peroxyacetyl nitrate  | kg m-2        |
| Total column polar stratospheric cloud                                     | kg m-2        |
| Total column propane   | kg m-2        |
| Total column propene   | kg m-2        |
| Total column radon   | kg m-2        |
| Total column rain water  | kg m-2        |
| Total column snow water  | kg m-2        |
| Total column stratospheric ozone   | kg m-2        |
| Total column sulphur dioxide   | kg m-2        |
| Total column supercooled liquid water                                      | kg m-2        |
| Total column terpenes  | kg m-2        |
| Total column water   | kg m-2        |
| Total column water vapour  | kg m-2        |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 1020 nm | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 1064 nm | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 1240 nm | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 1640 nm | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 2130 nm | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 340 nm  | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 355 nm  | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 380 nm  | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 400 nm  | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 440 nm  | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 469 nm  | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 500 nm  | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 532 nm  | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 550 nm  | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 645 nm  | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 670 nm  | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 800 nm  | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 858 nm  | dimensionless |
| Total fine mode ( $r < 0.5 \mu\text{m}$ ) aerosol optical depth at 865 nm  | dimensionless |
| Total precipitation  | m             |
| Total sky direct solar radiation at surface                                | J m-2         |
| U-component of wind  | m s-1         |
| UV biologically effective dose   | W m-2         |
| UV biologically effective dose, clear sky                                  | W m-2         |

|   |            |
|---|------------|
| V-component of wind   | m s-1      |
| Vertical velocity   | Pa s-1     |
| Vertically integrated mass of ammonium aerosol                                  | kg m-2     |
| Vertically integrated mass of coarse-mode nitrate aerosol                       | kg m-2     |
| Vertically integrated mass of dust aerosol (0.03 - 0.55 µm)                     | kg m-2     |
| Vertically integrated mass of dust aerosol (0.55 - 9 µm)                        | kg m-2     |
| Vertically integrated mass of dust aerosol (9 - 20 µm)                          | kg m-2     |
| Vertically integrated mass of fine-mode nitrate aerosol                         | kg m-2     |
| Vertically integrated mass of hydrophilic black carbon aerosol                  | kg m-2     |
| Vertically integrated mass of hydrophilic organic matter aerosol                | kg m-2     |
| Vertically integrated mass of hydrophobic black carbon aerosol                  | kg m-2     |
| Vertically integrated mass of hydrophobic organic matter aerosol                | kg m-2     |
| Vertically integrated mass of sea salt aerosol (0.03 - 0.5 µm)                  | kg m-2     |
| Vertically integrated mass of sea salt aerosol (0.5 - 5 µm)                     | kg m-2     |
| Vertically integrated mass of sea salt aerosol (5 - 20 µm)                      | kg m-2     |
| Vertically integrated mass of sulphate aerosol                                  | kg m-2     |
| Vertically integrated moisture divergence                                       | kg m-2     |
| Visibility  | m          |
| Wet deposition of ammonium aerosol by convective precipitation                  | kg m-2 s-1 |
| Wet deposition of ammonium aerosol by large-scale precipitation                 | kg m-2 s-1 |
| Wet deposition of coarse-mode nitrate aerosol by convective precipitation       | kg m-2 s-1 |
| Wet deposition of coarse-mode nitrate aerosol by large-scale precipitation      | kg m-2 s-1 |
| Wet deposition of dust aerosol (0.03 - 0.55 µm) by convective precipitation     | kg m-2 s-1 |
| Wet deposition of dust aerosol (0.03 - 0.55 µm) by large-scale precipitation    | kg m-2 s-1 |
| Wet deposition of dust aerosol (0.55 - 9 µm) by convective precipitation        | kg m-2 s-1 |
| Wet deposition of dust aerosol (0.55 - 9 µm) by large-scale precipitation       | kg m-2 s-1 |
| Wet deposition of dust aerosol (9 - 20 µm) by convective precipitation          | kg m-2 s-1 |
| Wet deposition of dust aerosol (9 - 20 µm) by large-scale precipitation         | kg m-2 s-1 |
| Wet deposition of fine-mode nitrate aerosol by convective precipitation         | kg m-2 s-1 |
| Wet deposition of fine-mode nitrate aerosol by large-scale precipitation        | kg m-2 s-1 |
| Wet deposition of hydrophilic black carbon aerosol by convective precipitation  | kg m-2 s-1 |
| Wet deposition of hydrophilic black carbon aerosol by large-scale precipitation | kg m-2 s-1 |

|   |            |
|---|------------|
| Wet deposition of hydrophilic organic matter aerosol by convective precipitation  | kg m-2 s-1 |
| Wet deposition of hydrophilic organic matter aerosol by large-scale precipitation | kg m-2 s-1 |
| Wet deposition of hydrophobic black carbon aerosol by convective precipitation    | kg m-2 s-1 |
| Wet deposition of hydrophobic black carbon aerosol by large-scale precipitation   | kg m-2 s-1 |
| Wet deposition of hydrophobic organic matter aerosol by convective precipitation  | kg m-2 s-1 |
| Wet deposition of hydrophobic organic matter aerosol by large-scale precipitation | kg m-2 s-1 |
| Wet deposition of sea salt aerosol (0.03 - 0.5 µm) by convective precipitation    | kg m-2 s-1 |
| Wet deposition of sea salt aerosol (0.03 - 0.5 µm) by large-scale precipitation   | kg m-2 s-1 |
| Wet deposition of sea salt aerosol (0.5 - 5 µm) by convective precipitation       | kg m-2 s-1 |
| Wet deposition of sea salt aerosol (0.5 - 5 µm) by large-scale precipitation      | kg m-2 s-1 |
| Wet deposition of sea salt aerosol (5 - 20 µm) by convective precipitation        | kg m-2 s-1 |
| Wet deposition of sea salt aerosol (5 - 20 µm) by large-scale precipitation       | kg m-2 s-1 |
| Wet deposition of sulphate aerosol by convective precipitation                    | kg m-2 s-1 |
| Wet deposition of sulphate aerosol by large-scale precipitation                   | kg m-2 s-1 |

## Долгосрочные прогнозы

Долгосрочные прогнозы климата до 9 месяцев вперед.

### Описание параметров (Flux)

| Параметр   |
|--|
| Momentum flux, u component [surface, 0] [uflx] [N m**-2]                               |
| Momentum flux, v component [surface, 0] [vflx] [N m**-2]                               |
| Sensible heat net flux [surface, 0] [shtfl] [W m**-2]                                  |
| Latent heat net flux [surface, 0] [lhtfl] [W m**-2]                                    |
| Temperature [surface, 0] [t] [K]   |
| Volumetric soil moisture content [depthBelowLandLayer, 0] [soilw] [Proportion]         |
| Volumetric soil moisture content [depthBelowLandLayer, 0] [soilw] [Proportion]         |
| Temperature [depthBelowLandLayer, 0] [t] [K]   |
| Temperature [depthBelowLandLayer, 0] [t] [K]   |
| Water equivalent of accumulated snow depth (deprecated) [surface, 0] [sdwe] [kg m**-2] |
| Downward long-wave radiation flux [surface, 0] [dlwrf] [W m**-2]                       |
| Upward long-wave radiation flux [surface, 0] [ulwrf] [W m**-2]                         |
| Upward long-wave radiation flux [nominalTop, 0] [ulwrf] [W m**-2]                      |
| Upward short-wave radiation flux [nominalTop, 0] [uswrf] [W m**-2]                     |
| Upward short-wave radiation flux [surface, 0] [uswrf] [W m**-2]                        |
| Downward short-wave radiation flux [surface, 0] [dswrf] [W m**-2]                      |
| UV-B downward solar flux [surface, 0] [duvb] [W m**-2]                                 |
| Clear sky UV-B downward solar flux [surface, 0] [cduvb] [W m**-2]                      |
| Total Cloud Cover [highCloudLayer, 0] [tcc] [%]  |
| Pressure [highCloudTop, 0] [pres] [Pa]   |
| Pressure [highCloudBottom, 0] [pres] [Pa]  |
| Temperature [highCloudTop, 0] [t] [K]  |
| Total Cloud Cover [middleCloudLayer, 0] [tcc] [%]                                      |
| Pressure [middleCloudTop, 0] [pres] [Pa]   |
| Pressure [middleCloudBottom, 0] [pres] [Pa]  |
| Temperature [middleCloudTop, 0] [t] [K]  |
| Total Cloud Cover [lowCloudLayer, 0] [tcc] [%]   |
| Pressure [lowCloudTop, 0] [pres] [Pa]  |
| Pressure [lowCloudBottom, 0] [pres] [Pa]   |
| Temperature [lowCloudTop, 0] [t] [K]   |
| Precipitation rate [surface, 0] [prate] [kg m**-2 s**-1]                               |
| Convective precipitation rate [surface, 0] [cpreat] [kg m**-2 s**-1]                   |
| Ground heat flux [surface, 0] [gflux] [W m**-2]  |
| Land-sea mask [surface, 0] [lsm] [(0 – 1)]   |
| Sea ice area fraction [surface, 0] [ci] [(0 – 1)]                                      |
| 10 metre U wind component [heightAboveGround, 10] [10u] [m s**-1]                      |
| 10 metre V wind component [heightAboveGround, 10] [10v] [m s**-1]                      |
| 2 metre temperature [heightAboveGround, 2] [2t] [K]                                    |
| 2 metre specific humidity [heightAboveGround, 2] [2sh] [kg kg**-1]                     |

|  |
|--|
| Surface pressure [surface, 0] [sp] [Pa]  |
| Maximum temperature [heightAboveGround, 2] [tmax] [K]                                      |
| Minimum temperature [heightAboveGround, 2] [tmin] [K]                                      |
| Maximum specific humidity at 2m [heightAboveGround, 2] [qmax] [kg kg**-1]                  |
| Minimum specific humidity at 2m [heightAboveGround, 2] [qmin] [kg kg**-1]                  |
| Water runoff [surface, 0] [watr] [kg m**-2]  |
| Potential evaporation rate [surface, 0] [pevpr] [W m**-2]                                  |
| Cloud work function [atmosphereSingleLayer, 0] [cwork] [J kg**-1]                          |
| Zonal flux of gravity wave stress [surface, 0] [u-gwd] [N m**-2]                           |
| Meridional flux of gravity wave stress [surface, 0] [v-gwd] [N m**-2]                      |
| Planetary boundary layer height [surface, 0] [hpbl] [m]                                    |
| Precipitable water [atmosphereSingleLayer, 0] [pwat] [kg m**-2]                            |
| Albedo [surface, 0] [al] [%]   |
| Total Cloud Cover [atmosphereSingleLayer, 0] [tcc] [%]                                     |
| Total Cloud Cover [convectiveCloudLayer, 0] [tcc] [%]                                      |
| Total Cloud Cover [boundaryLayerCloudLayer, 0] [tcc] [%]                                   |
| Ice thickness [surface, 0] [icetk] [m]   |
| Volumetric soil moisture content [depthBelowLandLayer, 0] [soilw] [Proportion]             |
| Volumetric soil moisture content [depthBelowLandLayer, 1] [soilw] [Proportion]             |
| Temperature [depthBelowLandLayer, 0] [t] [K]   |
| Temperature [depthBelowLandLayer, 1] [t] [K]   |
| Liquid volumetric soil moisture (non-frozen) [depthBelowLandLayer, 0] [soill] [Proportion] |
| Liquid volumetric soil moisture (non-frozen) [depthBelowLandLayer, 0] [soill] [Proportion] |
| Liquid volumetric soil moisture (non-frozen) [depthBelowLandLayer, 0] [soill] [Proportion] |
| Liquid volumetric soil moisture (non-frozen) [depthBelowLandLayer, 1] [soill] [Proportion] |
| Snow depth [surface, 0] [sde] [m]  |
| Plant canopy surface water [surface, 0] [cnwat] [kg m**-2]                                 |
| Surface roughness [surface, 0] [sr] [m]  |
| Vegetation [surface, 0] [veg] [%]  |
| Vegetation Type [surface, 0] [vgtyp] [Integer(0-13)]                                       |
| Soil type [surface, 0] [slt] [~]   |
| Surface Slope Type [surface, 0] [sltyp] [Index]  |
| Frictional velocity [surface, 0] [fricv] [m s**-1]   |
| Orography [surface, 0] [orog] [m]  |
| Categorical rain [surface, 0] [crain] [(Code table 4.222)]                                 |
| Exchange coefficient [surface, 0] [sfexc] [kg m**-2 s**-1]                                 |
| Aerodynamic conductance [surface, 0] [acond] [m s**-1]                                     |
| Storm surface runoff [surface, 0] [ssrun] [kg m**-2]                                       |
| Temperature [hybrid, 1] [t] [K]  |
| Specific humidity [hybrid, 1] [q] [kg kg**-1]  |
| U component of wind [hybrid, 1] [u] [m s**-1]  |
| V component of wind [hybrid, 1] [v] [m s**-1]  |
| Geopotential Height [hybrid, 1] [gh] [gpm]   |
| Direct evaporation from bare soil [surface, 0] [evbs] [W m**-2]                            |

|  |
|--|
| Canopy water evaporation [surface, 0] [evcw] [W m**-2]               |
| Transpiration [surface, 0] [trans] [W m**-2]                         |
| Sublimation (evaporation from snow) [surface, 0] [sbsno] [W m**-2]   |
| Snow cover [surface, 0] [snowc] [%]                                  |
| Soil moisture content [depthBelowLandLayer, 0] [ssw] [kg m**-2]      |
| Downward short-wave radiation flux [nominalTop, 0] [dswr] [W m**-2]  |
| Clear Sky Upward Long Wave Flux [nominalTop, 0] [csulf] [W m**-2]    |
| Clear Sky Upward Solar Flux [nominalTop, 0] [csusf] [W m**-2]        |
| Clear Sky Downward Long Wave Flux [surface, 0] [csdlf] [W m**-2]     |
| Clear Sky Upward Solar Flux [surface, 0] [csusf] [W m**-2]           |
| Clear Sky Downward Solar Flux [surface, 0] [csdsf] [W m**-2]         |
| Clear Sky Upward Long Wave Flux [surface, 0] [csulf] [W m**-2]       |
| Snow phase change heat flux [surface, 0] [snohf] [W m**-2]           |
| Visible Beam Downward Solar Flux [surface, 0] [vbdsf] [W m**-2]      |
| Visible Diffuse Downward Solar Flux [surface, 0] [vddsf] [W m**-2]   |
| Near IR Beam Downward Solar Flux [surface, 0] [nbdsf] [W m**-2]      |
| Near IR Diffuse Downward Solar Flux [surface, 0] [nddsf] [W m**-2]   |
| Snowfall rate water equivalent [surface, 0] [srweq] [kg m**-2 s**-1] |

#### Описание параметров (Pressure)

|  |
|--|
| Mean sea level pressure [meanSea, 0] [msl] [Pa]          |
| Geopotential Height [isobaricInhPa, 1] [gh] [gpm]        |
| Temperature [isobaricInhPa, 1] [t] [K]                   |
| Relative humidity [isobaricInhPa, 1] [r] [%]             |
| Specific humidity [isobaricInhPa, 1] [q] [kg kg**-1]     |
| Vertical velocity [isobaricInhPa, 1] [w] [Pa s**-1]      |
| U component of wind [isobaricInhPa, 1] [u] [m s**-1]     |
| V component of wind [isobaricInhPa, 1] [v] [m s**-1]     |
| Absolute vorticity [isobaricInhPa, 1] [absv] [s**-1]     |
| Ozone mixing ratio [isobaricInhPa, 1] [o3mr] [kg kg**-1] |
| Geopotential Height [isobaricInhPa, 2] [gh] [gpm]        |
| Temperature [isobaricInhPa, 2] [t] [K]                   |
| Relative humidity [isobaricInhPa, 2] [r] [%]             |
| Specific humidity [isobaricInhPa, 2] [q] [kg kg**-1]     |
| Vertical velocity [isobaricInhPa, 2] [w] [Pa s**-1]      |
| U component of wind [isobaricInhPa, 2] [u] [m s**-1]     |
| V component of wind [isobaricInhPa, 2] [v] [m s**-1]     |
| Absolute vorticity [isobaricInhPa, 2] [absv] [s**-1]     |
| Ozone mixing ratio [isobaricInhPa, 2] [o3mr] [kg kg**-1] |
| Geopotential Height [isobaricInhPa, 3] [gh] [gpm]        |
| Temperature [isobaricInhPa, 3] [t] [K]                   |
| Relative humidity [isobaricInhPa, 3] [r] [%]             |
| Specific humidity [isobaricInhPa, 3] [q] [kg kg**-1]     |
| Vertical velocity [isobaricInhPa, 3] [w] [Pa s**-1]      |

|  |
|--|
| U component of wind [isobaricInhPa, 3] [u] [m s**-1]       |
| V component of wind [isobaricInhPa, 3] [v] [m s**-1]       |
| Absolute vorticity [isobaricInhPa, 3] [absv] [s**-1]       |
| Ozone mixing ratio [isobaricInhPa, 3] [o3mr] [kg kg**-1]   |
| Geopotential Height [isobaricInhPa, 5] [gh] [gpm]          |
| Temperature [isobaricInhPa, 5] [t] [K]                     |
| Relative humidity [isobaricInhPa, 5] [r] [%]               |
| Specific humidity [isobaricInhPa, 5] [q] [kg kg**-1]       |
| Vertical velocity [isobaricInhPa, 5] [w] [Pa s**-1]        |
| U component of wind [isobaricInhPa, 5] [u] [m s**-1]       |
| V component of wind [isobaricInhPa, 5] [v] [m s**-1]       |
| Absolute vorticity [isobaricInhPa, 5] [absv] [s**-1]       |
| Ozone mixing ratio [isobaricInhPa, 5] [o3mr] [kg kg**-1]   |
| Geopotential Height [isobaricInhPa, 7] [gh] [gpm]          |
| Temperature [isobaricInhPa, 7] [t] [K]                     |
| Relative humidity [isobaricInhPa, 7] [r] [%]               |
| Specific humidity [isobaricInhPa, 7] [q] [kg kg**-1]       |
| Vertical velocity [isobaricInhPa, 7] [w] [Pa s**-1]        |
| U component of wind [isobaricInhPa, 7] [u] [m s**-1]       |
| V component of wind [isobaricInhPa, 7] [v] [m s**-1]       |
| Absolute vorticity [isobaricInhPa, 7] [absv] [s**-1]       |
| Ozone mixing ratio [isobaricInhPa, 7] [o3mr] [kg kg**-1]   |
| Geopotential Height [isobaricInhPa, 10] [gh] [gpm]         |
| Temperature [isobaricInhPa, 10] [t] [K]                    |
| Relative humidity [isobaricInhPa, 10] [r] [%]              |
| Specific humidity [isobaricInhPa, 10] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 10] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 10] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 10] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 10] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 10] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 10] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 20] [gh] [gpm]         |
| Temperature [isobaricInhPa, 20] [t] [K]                    |
| Relative humidity [isobaricInhPa, 20] [r] [%]              |
| Specific humidity [isobaricInhPa, 20] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 20] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 20] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 20] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 20] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 20] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 20] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 30] [gh] [gpm]         |
| Temperature [isobaricInhPa, 30] [t] [K]                    |

|   |
|---|
| Relative humidity [isobaricInhPa, 30] [r] [%]               |
| Specific humidity [isobaricInhPa, 30] [q] [kg kg**-1]       |
| Vertical velocity [isobaricInhPa, 30] [w] [Pa s**-1]        |
| U component of wind [isobaricInhPa, 30] [u] [m s**-1]       |
| V component of wind [isobaricInhPa, 30] [v] [m s**-1]       |
| Absolute vorticity [isobaricInhPa, 30] [absv] [s**-1]       |
| Cloud mixing ratio [isobaricInhPa, 30] [clwmr] [kg kg**-1]  |
| Ozone mixing ratio [isobaricInhPa, 30] [o3mr] [kg kg**-1]   |
| Geopotential Height [isobaricInhPa, 50] [gh] [gpm]          |
| Temperature [isobaricInhPa, 50] [t] [K]                     |
| Relative humidity [isobaricInhPa, 50] [r] [%]               |
| Specific humidity [isobaricInhPa, 50] [q] [kg kg**-1]       |
| Vertical velocity [isobaricInhPa, 50] [w] [Pa s**-1]        |
| U component of wind [isobaricInhPa, 50] [u] [m s**-1]       |
| V component of wind [isobaricInhPa, 50] [v] [m s**-1]       |
| Absolute vorticity [isobaricInhPa, 50] [absv] [s**-1]       |
| Cloud mixing ratio [isobaricInhPa, 50] [clwmr] [kg kg**-1]  |
| Ozone mixing ratio [isobaricInhPa, 50] [o3mr] [kg kg**-1]   |
| Geopotential Height [isobaricInhPa, 70] [gh] [gpm]          |
| Temperature [isobaricInhPa, 70] [t] [K]                     |
| Relative humidity [isobaricInhPa, 70] [r] [%]               |
| Specific humidity [isobaricInhPa, 70] [q] [kg kg**-1]       |
| Vertical velocity [isobaricInhPa, 70] [w] [Pa s**-1]        |
| U component of wind [isobaricInhPa, 70] [u] [m s**-1]       |
| V component of wind [isobaricInhPa, 70] [v] [m s**-1]       |
| Absolute vorticity [isobaricInhPa, 70] [absv] [s**-1]       |
| Cloud mixing ratio [isobaricInhPa, 70] [clwmr] [kg kg**-1]  |
| Ozone mixing ratio [isobaricInhPa, 70] [o3mr] [kg kg**-1]   |
| Geopotential Height [isobaricInhPa, 100] [gh] [gpm]         |
| Temperature [isobaricInhPa, 100] [t] [K]                    |
| Relative humidity [isobaricInhPa, 100] [r] [%]              |
| Specific humidity [isobaricInhPa, 100] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 100] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 100] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 100] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 100] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 100] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 100] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 125] [gh] [gpm]         |
| Temperature [isobaricInhPa, 125] [t] [K]                    |
| Relative humidity [isobaricInhPa, 125] [r] [%]              |
| Specific humidity [isobaricInhPa, 125] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 125] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 125] [u] [m s**-1]      |

|   |
|---|
| V component of wind [isobaricInhPa, 125] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 125] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 125] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 125] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 150] [gh] [gpm]         |
| Temperature [isobaricInhPa, 150] [t] [K]                    |
| Relative humidity [isobaricInhPa, 150] [r] [%]              |
| Specific humidity [isobaricInhPa, 150] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 150] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 150] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 150] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 150] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 150] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 150] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 175] [gh] [gpm]         |
| Temperature [isobaricInhPa, 175] [t] [K]                    |
| Relative humidity [isobaricInhPa, 175] [r] [%]              |
| Specific humidity [isobaricInhPa, 175] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 175] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 175] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 175] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 175] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 175] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 175] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 200] [gh] [gpm]         |
| Temperature [isobaricInhPa, 200] [t] [K]                    |
| Relative humidity [isobaricInhPa, 200] [r] [%]              |
| Specific humidity [isobaricInhPa, 200] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 200] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 200] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 200] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 200] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 200] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 200] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 225] [gh] [gpm]         |
| Temperature [isobaricInhPa, 225] [t] [K]                    |
| Relative humidity [isobaricInhPa, 225] [r] [%]              |
| Specific humidity [isobaricInhPa, 225] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 225] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 225] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 225] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 225] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 225] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 225] [o3mr] [kg kg**-1]  |

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| Geopotential Height [isobaricInhPa, 250] [gh] [gpm]         |
| Temperature [isobaricInhPa, 250] [t] [K]                    |
| Relative humidity [isobaricInhPa, 250] [r] [%]              |
| Specific humidity [isobaricInhPa, 250] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 250] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 250] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 250] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 250] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 250] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 250] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 300] [gh] [gpm]         |
| Temperature [isobaricInhPa, 300] [t] [K]                    |
| Relative humidity [isobaricInhPa, 300] [r] [%]              |
| Specific humidity [isobaricInhPa, 300] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 300] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 300] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 300] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 300] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 300] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 300] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 350] [gh] [gpm]         |
| Temperature [isobaricInhPa, 350] [t] [K]                    |
| Relative humidity [isobaricInhPa, 350] [r] [%]              |
| Specific humidity [isobaricInhPa, 350] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 350] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 350] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 350] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 350] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 350] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 350] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 400] [gh] [gpm]         |
| Temperature [isobaricInhPa, 400] [t] [K]                    |
| Relative humidity [isobaricInhPa, 400] [r] [%]              |
| Specific humidity [isobaricInhPa, 400] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 400] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 400] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 400] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 400] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 400] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 400] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 450] [gh] [gpm]         |
| Temperature [isobaricInhPa, 450] [t] [K]                    |
| Relative humidity [isobaricInhPa, 450] [r] [%]              |
| Specific humidity [isobaricInhPa, 450] [q] [kg kg**-1]      |

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| Vertical velocity [isobaricInhPa, 450] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 450] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 450] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 450] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 450] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 450] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 500] [gh] [gpm]         |
| Temperature [isobaricInhPa, 500] [t] [K]                    |
| Relative humidity [isobaricInhPa, 500] [r] [%]              |
| Specific humidity [isobaricInhPa, 500] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 500] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 500] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 500] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 500] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 500] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 500] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 550] [gh] [gpm]         |
| Temperature [isobaricInhPa, 550] [t] [K]                    |
| Relative humidity [isobaricInhPa, 550] [r] [%]              |
| Specific humidity [isobaricInhPa, 550] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 550] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 550] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 550] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 550] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 550] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 550] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 600] [gh] [gpm]         |
| Temperature [isobaricInhPa, 600] [t] [K]                    |
| Relative humidity [isobaricInhPa, 600] [r] [%]              |
| Specific humidity [isobaricInhPa, 600] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 600] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 600] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 600] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 600] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 600] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 600] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 650] [gh] [gpm]         |
| Temperature [isobaricInhPa, 650] [t] [K]                    |
| Relative humidity [isobaricInhPa, 650] [r] [%]              |
| Specific humidity [isobaricInhPa, 650] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 650] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 650] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 650] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 650] [absv] [s**-1]      |

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| Cloud mixing ratio [isobaricInhPa, 650] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 650] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 700] [gh] [gpm]         |
| Temperature [isobaricInhPa, 700] [t] [K]                    |
| Relative humidity [isobaricInhPa, 700] [r] [%]              |
| Specific humidity [isobaricInhPa, 700] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 700] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 700] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 700] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 700] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 700] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 700] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 750] [gh] [gpm]         |
| Temperature [isobaricInhPa, 750] [t] [K]                    |
| Relative humidity [isobaricInhPa, 750] [r] [%]              |
| Specific humidity [isobaricInhPa, 750] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 750] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 750] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 750] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 750] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 750] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 750] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 775] [gh] [gpm]         |
| Temperature [isobaricInhPa, 775] [t] [K]                    |
| Relative humidity [isobaricInhPa, 775] [r] [%]              |
| Specific humidity [isobaricInhPa, 775] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 775] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 775] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 775] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 775] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 775] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 775] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 800] [gh] [gpm]         |
| Temperature [isobaricInhPa, 800] [t] [K]                    |
| Relative humidity [isobaricInhPa, 800] [r] [%]              |
| Specific humidity [isobaricInhPa, 800] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 800] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 800] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 800] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 800] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 800] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 800] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 825] [gh] [gpm]         |
| Temperature [isobaricInhPa, 825] [t] [K]                    |

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| Relative humidity [isobaricInhPa, 825] [r] [%]              |
| Specific humidity [isobaricInhPa, 825] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 825] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 825] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 825] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 825] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 825] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 825] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 850] [gh] [gpm]         |
| Temperature [isobaricInhPa, 850] [t] [K]                    |
| Relative humidity [isobaricInhPa, 850] [r] [%]              |
| Specific humidity [isobaricInhPa, 850] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 850] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 850] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 850] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 850] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 850] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 850] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 875] [gh] [gpm]         |
| Temperature [isobaricInhPa, 875] [t] [K]                    |
| Relative humidity [isobaricInhPa, 875] [r] [%]              |
| Specific humidity [isobaricInhPa, 875] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 875] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 875] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 875] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 875] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 875] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 875] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 900] [gh] [gpm]         |
| Temperature [isobaricInhPa, 900] [t] [K]                    |
| Relative humidity [isobaricInhPa, 900] [r] [%]              |
| Specific humidity [isobaricInhPa, 900] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 900] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 900] [u] [m s**-1]      |
| V component of wind [isobaricInhPa, 900] [v] [m s**-1]      |
| Absolute vorticity [isobaricInhPa, 900] [absv] [s**-1]      |
| Cloud mixing ratio [isobaricInhPa, 900] [clwmr] [kg kg**-1] |
| Ozone mixing ratio [isobaricInhPa, 900] [o3mr] [kg kg**-1]  |
| Geopotential Height [isobaricInhPa, 925] [gh] [gpm]         |
| Temperature [isobaricInhPa, 925] [t] [K]                    |
| Relative humidity [isobaricInhPa, 925] [r] [%]              |
| Specific humidity [isobaricInhPa, 925] [q] [kg kg**-1]      |
| Vertical velocity [isobaricInhPa, 925] [w] [Pa s**-1]       |
| U component of wind [isobaricInhPa, 925] [u] [m s**-1]      |

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| V component of wind [isobaricInhPa, 925] [v] [m s**-1]                     |
| Absolute vorticity [isobaricInhPa, 925] [absv] [s**-1]                     |
| Cloud mixing ratio [isobaricInhPa, 925] [clwmr] [kg kg**-1]                |
| Ozone mixing ratio [isobaricInhPa, 925] [o3mr] [kg kg**-1]                 |
| Geopotential Height [isobaricInhPa, 950] [gh] [gpm]                        |
| Temperature [isobaricInhPa, 950] [t] [K]                                   |
| Relative humidity [isobaricInhPa, 950] [r] [%]                             |
| Specific humidity [isobaricInhPa, 950] [q] [kg kg**-1]                     |
| Vertical velocity [isobaricInhPa, 950] [w] [Pa s**-1]                      |
| U component of wind [isobaricInhPa, 950] [u] [m s**-1]                     |
| V component of wind [isobaricInhPa, 950] [v] [m s**-1]                     |
| Absolute vorticity [isobaricInhPa, 950] [absv] [s**-1]                     |
| Cloud mixing ratio [isobaricInhPa, 950] [clwmr] [kg kg**-1]                |
| Ozone mixing ratio [isobaricInhPa, 950] [o3mr] [kg kg**-1]                 |
| Geopotential Height [isobaricInhPa, 975] [gh] [gpm]                        |
| Temperature [isobaricInhPa, 975] [t] [K]                                   |
| Relative humidity [isobaricInhPa, 975] [r] [%]                             |
| Specific humidity [isobaricInhPa, 975] [q] [kg kg**-1]                     |
| Vertical velocity [isobaricInhPa, 975] [w] [Pa s**-1]                      |
| U component of wind [isobaricInhPa, 975] [u] [m s**-1]                     |
| V component of wind [isobaricInhPa, 975] [v] [m s**-1]                     |
| Absolute vorticity [isobaricInhPa, 975] [absv] [s**-1]                     |
| Cloud mixing ratio [isobaricInhPa, 975] [clwmr] [kg kg**-1]                |
| Ozone mixing ratio [isobaricInhPa, 975] [o3mr] [kg kg**-1]                 |
| Geopotential Height [isobaricInhPa, 1000] [gh] [gpm]                       |
| Temperature [isobaricInhPa, 1000] [t] [K]                                  |
| Relative humidity [isobaricInhPa, 1000] [r] [%]                            |
| Specific humidity [isobaricInhPa, 1000] [q] [kg kg**-1]                    |
| Vertical velocity [isobaricInhPa, 1000] [w] [Pa s**-1]                     |
| U component of wind [isobaricInhPa, 1000] [u] [m s**-1]                    |
| V component of wind [isobaricInhPa, 1000] [v] [m s**-1]                    |
| Absolute vorticity [isobaricInhPa, 1000] [absv] [s**-1]                    |
| Cloud mixing ratio [isobaricInhPa, 1000] [clwmr] [kg kg**-1]               |
| Ozone mixing ratio [isobaricInhPa, 1000] [o3mr] [kg kg**-1]                |
| 2 metre dewpoint temperature [heightAboveGround, 2] [2d] [K]               |
| 2 metre relative humidity [heightAboveGround, 2] [2r] [%]                  |
| Total Precipitation [surface, 0] [tp] [kg m**-2]                           |
| Convective precipitation (water) [surface, 0] [acpcp] [kg m**-2]           |
| Large scale precipitation (non-convective) [surface, 0] [ncpcp] [kg m**-2] |
| Categorical snow [surface, 0] [csnow] [(Code table 4.222)]                 |
| Categorical ice pellets [surface, 0] [cicep] [(Code table 4.222)]          |
| Categorical freezing rain [surface, 0] [cfrzr] [(Code table 4.222)]        |
| Categorical rain [surface, 0] [crain] [(Code table 4.222)]                 |
| Surface lifted index [surface, 0] [lftx] [K]                               |

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| Convective available potential energy [surface, 0] [cape] [ $\text{J kg}^{**-1}$ ]                  |
| Convective inhibition [surface, 0] [cin] [ $\text{J kg}^{**-1}$ ]                                   |
| Cloud water [atmosphereSingleLayer, 0] [cwat] [ $\text{kg m}^{**-2}$ ]                              |
| Relative humidity [atmosphereSingleLayer, 0] [r] [%]  |
| Total ozone [atmosphereSingleLayer, 0] [tozne] [DU]   |
| Storm relative helicity [heightAboveGroundLayer, 3000] [hlcy] [ $\text{m}^{**2 \text{ s}^{**-2}}$ ] |
| Storm relative helicity [heightAboveGroundLayer, 1000] [hlcy] [ $\text{m}^{**2 \text{ s}^{**-2}}$ ] |
| U-component storm motion [heightAboveGroundLayer, 6000] [ustm] [ $\text{m s}^{**-1}$ ]              |
| V-component storm motion [heightAboveGroundLayer, 6000] [vstm] [ $\text{m s}^{**-1}$ ]              |
| Tropopause pressure [tropopause, 0] [trpp] [Pa]   |
| Geopotential Height [tropopause, 0] [gh] [gpm]  |
| Temperature [tropopause, 0] [t] [K]   |
| U component of wind [tropopause, 0] [u] [ $\text{m s}^{**-1}$ ]                                     |
| V component of wind [tropopause, 0] [v] [ $\text{m s}^{**-1}$ ]                                     |
| Vertical speed shear [tropopause, 0] [vwsh] [ $\text{s}^{**-1}$ ]                                   |
| Pressure [maxWind, 0] [pres] [Pa]   |
| Geopotential Height [maxWind, 0] [gh] [gpm]   |
| U component of wind [maxWind, 0] [u] [ $\text{m s}^{**-1}$ ]  |
| V component of wind [maxWind, 0] [v] [ $\text{m s}^{**-1}$ ]  |
| Temperature [maxWind, 0] [t] [K]  |
| Temperature [heightAboveSea, 1829] [t] [K]  |
| U component of wind [heightAboveSea, 1829] [u] [ $\text{m s}^{**-1}$ ]                              |
| V component of wind [heightAboveSea, 1829] [v] [ $\text{m s}^{**-1}$ ]                              |
| Temperature [heightAboveSea, 2743] [t] [K]  |
| U component of wind [heightAboveSea, 2743] [u] [ $\text{m s}^{**-1}$ ]                              |
| V component of wind [heightAboveSea, 2743] [v] [ $\text{m s}^{**-1}$ ]                              |
| Temperature [heightAboveSea, 3658] [t] [K]  |
| U component of wind [heightAboveSea, 3658] [u] [ $\text{m s}^{**-1}$ ]                              |
| V component of wind [heightAboveSea, 3658] [v] [ $\text{m s}^{**-1}$ ]                              |
| Temperature [heightAboveSea, 4572] [t] [K]  |
| U component of wind [heightAboveSea, 4572] [u] [ $\text{m s}^{**-1}$ ]                              |
| V component of wind [heightAboveSea, 4572] [v] [ $\text{m s}^{**-1}$ ]                              |
| Geopotential Height [isothermZero, 0] [gh] [gpm]  |
| Relative humidity [isothermZero, 0] [r] [%]   |
| Geopotential Height [highestTroposphericFreezing, 0] [gh] [gpm]                                     |
| Relative humidity [highestTroposphericFreezing, 0] [r] [%]  |
| Temperature [pressureFromGroundLayer, 3000] [t] [K]   |
| Relative humidity [pressureFromGroundLayer, 3000] [r] [%]   |
| Dew point temperature [pressureFromGroundLayer, 3000] [dpt] [K]                                     |
| Specific humidity [pressureFromGroundLayer, 3000] [q] [ $\text{kg kg}^{**-1}$ ]                     |
| U component of wind [pressureFromGroundLayer, 3000] [u] [ $\text{m s}^{**-1}$ ]                     |
| V component of wind [pressureFromGroundLayer, 3000] [v] [ $\text{m s}^{**-1}$ ]                     |
| Precipitable water [pressureFromGroundLayer, 3000] [pwat] [ $\text{kg m}^{**-2}$ ]                  |
| Parcel lifted index (to 500 hPa) [pressureFromGroundLayer, 3000] [pli] [K]                          |

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| Best (4-layer) lifted index [surface, 0] [4lftx] [K]                                     |
| Convective available potential energy [pressureFromGroundLayer, 18000] [cape] [J kg**-1] |
| Convective inhibition [pressureFromGroundLayer, 18000] [cin] [J kg**-1]                  |
| Relative humidity [sigmaLayer, 0] [r] [%]  |
| Relative humidity [sigmaLayer, 0] [r] [%]  |
| Relative humidity [sigmaLayer, 1] [r] [%]  |
| Relative humidity [sigmaLayer, 0] [r] [%]  |
| Temperature [sigma, 1] [t] [K]   |
| Potential temperature [sigma, 1] [pt] [K]  |
| Relative humidity [sigma, 1] [r] [%]   |
| U component of wind [sigma, 1] [u] [m s**-1]   |
| V component of wind [sigma, 1] [v] [m s**-1]   |
| Vertical velocity [sigma, 1] [w] [Pa s**-1]  |
| U component of wind [potentialVorticity, 2] [u] [m s**-1]                                |
| V component of wind [potentialVorticity, 2] [v] [m s**-1]                                |
| Temperature [potentialVorticity, 2] [t] [K]  |
| Geopotential Height [potentialVorticity, 2] [gh] [gpm]                                   |
| Pressure [potentialVorticity, 2] [pres] [Pa]   |
| Vertical speed shear [potentialVorticity, 2] [vwsh] [s**-1]                              |
| U component of wind [potentialVorticity, 2147486] [u] [m s**-1]                          |
| V component of wind [potentialVorticity, 2147486] [v] [m s**-1]                          |
| Temperature [potentialVorticity, 2147486] [t] [K]  |
| Geopotential Height [potentialVorticity, 2147486] [gh] [gpm]                             |
| Pressure [potentialVorticity, 2147486] [pres] [Pa]                                       |
| Vertical speed shear [potentialVorticity, 2147486] [vwsh] [s**-1]                        |
| Pressure reduced to MSL [meanSea, 0] [prmsl] [Pa]  |
| 5-wave geopotential height [isobaricInhPa, 500] [5wavh] [gpm]                            |
| Geopotential height anomaly [isobaricInhPa, 1000] [gpa] [gpm]                            |
| Geopotential height anomaly [isobaricInhPa, 500] [gpa] [gpm]                             |
| 5-wave geopotential height anomaly [isobaricInhPa, 500] [5wava] [gpm]                    |
| Stream function [isobaricInhPa, 1000] [strf] [m**2 s**-1]                                |
| Velocity potential [isobaricInhPa, 1000] [vp] [m**2 s**-1]                               |
| Stream function [isobaricInhPa, 975] [strf] [m**2 s**-1]                                 |
| Velocity potential [isobaricInhPa, 975] [vp] [m**2 s**-1]                                |
| Stream function [isobaricInhPa, 950] [strf] [m**2 s**-1]                                 |
| Velocity potential [isobaricInhPa, 950] [vp] [m**2 s**-1]                                |
| Stream function [isobaricInhPa, 925] [strf] [m**2 s**-1]                                 |
| Velocity potential [isobaricInhPa, 925] [vp] [m**2 s**-1]                                |
| Stream function [isobaricInhPa, 900] [strf] [m**2 s**-1]                                 |
| Velocity potential [isobaricInhPa, 900] [vp] [m**2 s**-1]                                |
| Stream function [isobaricInhPa, 875] [strf] [m**2 s**-1]                                 |
| Velocity potential [isobaricInhPa, 875] [vp] [m**2 s**-1]                                |
| Stream function [isobaricInhPa, 850] [strf] [m**2 s**-1]                                 |
| Velocity potential [isobaricInhPa, 850] [vp] [m**2 s**-1]                                |



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| Stream function [isobaricInhPa, 30] [strf] [ $m^{**2} s^{**-1}$ ]  |
| Velocity potential [isobaricInhPa, 30] [vp] [ $m^{**2} s^{**-1}$ ] |
| Stream function [isobaricInhPa, 20] [strf] [ $m^{**2} s^{**-1}$ ]  |
| Velocity potential [isobaricInhPa, 20] [vp] [ $m^{**2} s^{**-1}$ ] |
| Stream function [isobaricInhPa, 10] [strf] [ $m^{**2} s^{**-1}$ ]  |
| Velocity potential [isobaricInhPa, 10] [vp] [ $m^{**2} s^{**-1}$ ] |
| Stream function [isobaricInhPa, 7] [strf] [ $m^{**2} s^{**-1}$ ]   |
| Velocity potential [isobaricInhPa, 7] [vp] [ $m^{**2} s^{**-1}$ ]  |
| Stream function [isobaricInhPa, 5] [strf] [ $m^{**2} s^{**-1}$ ]   |
| Velocity potential [isobaricInhPa, 5] [vp] [ $m^{**2} s^{**-1}$ ]  |
| Stream function [isobaricInhPa, 3] [strf] [ $m^{**2} s^{**-1}$ ]   |
| Velocity potential [isobaricInhPa, 3] [vp] [ $m^{**2} s^{**-1}$ ]  |
| Stream function [isobaricInhPa, 2] [strf] [ $m^{**2} s^{**-1}$ ]   |
| Velocity potential [isobaricInhPa, 2] [vp] [ $m^{**2} s^{**-1}$ ]  |
| Stream function [isobaricInhPa, 1] [strf] [ $m^{**2} s^{**-1}$ ]   |
| Velocity potential [isobaricInhPa, 1] [vp] [ $m^{**2} s^{**-1}$ ]  |