

## ICON-DREAM Parameter Table

**Note:** All provided parameters are in grib2-format.

**Table 1:** 2D parameter

| Parameter<br>(grib name) | Description                          | Level   | Type          | Unit              | Daily and monthly statistics |
|--------------------------|--------------------------------------|---------|---------------|-------------------|------------------------------|
| CLCT                     | total cloud cover                    | -       | instantaneous | %                 | average                      |
| PMSL                     | pressure reduced to mean sea level   | surface | instantaneous | Pa                | average                      |
| PS                       | surface pressure (not reduced)       | surface | instantaneous | Pa                | average                      |
| RELHUM_2M                | 2m relative humidity                 | 2 m     | instantaneous | %                 | average                      |
| QV_S                     | surface specific humidity            | surface | instantaneous | kg/kg             | average                      |
| TD_2M                    | Dew point                            | 2 m     | instantaneous | K                 | average                      |
| TMAX_2M                  | 2m maximum temperature               | 2 m     | time interval | K                 | maximum                      |
| TMIN_2M                  | 2m minimum temperature               | 2 m     | time interval | K                 | minimum                      |
| TOT_PRECIP               | total precipitation                  | surface | accumulated   | kg/m <sup>2</sup> | sum                          |
| T_2M                     | 2m temperature                       | 2 m     | instantaneous | K                 | average                      |
| U_10M                    | 10m zonal wind speed                 | 10 m    | instantaneous | m/s               | Not computed                 |
| V_10M                    | 10m meridional wind speed            | 10 m    | instantaneous | m/s               | Not computed                 |
| WS_10M                   | 10m wind speed                       | 10 m    | instantaneous | m/s               | average                      |
| VMAX_10M                 | Maximum wind                         | 10 m    | maximum       | m/s               | maximum                      |
| ASWDIFD_S                | Surface down solar diffuse radiation | surface | average       | W/m <sup>2</sup>  | average                      |
| ASWDIR_S                 | Surface down solar direct radiation  | surface | average       | W/m <sup>2</sup>  | average                      |

|    |                   |         |               |   |         |
|----|-------------------|---------|---------------|---|---------|
| Z0 | surface roughness | surface | instantaneous | m | average |
|----|-------------------|---------|---------------|---|---------|

**Table 2:** 3D parameters

| Parameter | Description              | Level                      | Level type  | Type          | Unit                           | Daily and monthly statistics |
|-----------|--------------------------|----------------------------|-------------|---------------|--------------------------------|------------------------------|
| TKE       | turbulent kinetic energy | the 11 lowest model levels | half levels | instantaneous | m <sup>2</sup> /s <sup>2</sup> | average                      |
| U         | zonal wind speed         | the 10 lowest model levels | full levels | instantaneous | m/s                            | Not computed                 |
| V         | meridional wind speed    | the 10 lowest model levels | full levels | instantaneous | m/s                            | Not computed                 |
| WS        | wind speed               | the 10 lowest model levels | full levels | instantaneous | m/s                            | average                      |
| DEN       | density of moist air     | the 10 lowest model levels | full levels | instantaneous | kg/m <sup>3</sup>              | average                      |
| QV        | specific humidity        | the 10 lowest model levels | full levels | instantaneous | kg/kg                          | average                      |
| P         | pressure                 | the 10 lowest model levels | full levels | instantaneous | Pa                             | average                      |

Height of the full and half levels over zero topography, e.g. the oceans.

| Level index (full levels) |    |  | height  |
|---------------------------|----|--|---------|
| Global                    | EU |  | [m]     |
| 111                       | 65 |  | 892,082 |
| 112                       | 66 |  | 739,009 |
| 113                       | 67 |  | 598,144 |
| 114                       | 68 |  | 469,899 |
| 115                       | 69 |  | 354,776 |
| 116                       | 70 |  | 253,409 |
| 117                       | 71 |  | 166,626 |
| 118                       | 72 |  | 95,582  |
| 119                       | 73 |  | 42,083  |
| 120                       | 74 |  | 10,000  |

| Level index (half levels) |    |  | height  |
|---------------------------|----|--|---------|
| Global                    | EU |  | [m]     |
| 111                       | 65 |  | 971,624 |
| 112                       | 66 |  | 812,540 |
| 113                       | 67 |  | 665,478 |
| 114                       | 68 |  | 530,811 |
| 115                       | 69 |  | 408,988 |
| 116                       | 70 |  | 300,565 |
| 117                       | 71 |  | 206,253 |
| 118                       | 72 |  | 126,999 |
| 119                       | 73 |  | 64,166  |
| 120                       | 74 |  | 20,000  |
| 121                       | 75 |  | 0       |

**Invariant parameters** can be found in the files  
ICON-DREAM-Global\_constant\_fields.grb and  
ICON-DREAM-EU\_constant\_fields.grb

**Table 3:** Invariant parameters

| Parameter | Description                                                         | Type     | Unit        |
|-----------|---------------------------------------------------------------------|----------|-------------|
| HSURF     | Geometric height of the earth's surface above msl                   | constant | m           |
| HLL       | Geometric height of model half levels above msl                     | constant | m           |
| FR_LAND   | Fraction of land                                                    | constant | range 0 – 1 |
| h         | Geometric height of the full model levels above the earth's surface | constant | m           |

Information about the grid can be found in these files (netCDF):  
ICON-DREAM-Global\_grid.nc  
ICON-DREAM-EU\_grid.nc