

**Table 1:** 2D parameter

| Parameter   | Description   | Level | Type          | Unit              |
|-------------|---|-------|---------------|-------------------|
| ALWU_S      | long wave upward radiation flux at surface                | -     | average       | W/m <sup>2</sup>  |
| ASOB_S      | net short wave radiation flux at the surface              | -     | average       | W/m <sup>2</sup>  |
| ASWDIFD_S   | short wave diffuse downward radiation flux at the surface | -     | average       | W/m <sup>2</sup>  |
| ASWDIR_S    | short wave direct radiation flux at the surface           | -     | average       | W/m <sup>2</sup>  |
| ATHB_S      | net long wave radiation flux at the surface               | -     | average       | W/m <sup>2</sup>  |
| ATHD_S      | long wave downward radiation flux at the surface          | -     | average       | W/m <sup>2</sup>  |
| CLCT        | total cloud cover   | -     | instantaneous | %                 |
| DURSUN      | sunshine duration   | -     | accumulated   | s                 |
| H_PBL       | height of the planetary boundary layer                    | -     | instantaneous | m                 |
| H_SNOW      | thickness of snow   | -     | instantaneous | m                 |
| LHFL_S      | surface latent heat flux                                  | -     | instantaneous | W/m <sup>2</sup>  |
| LWU_S       | long wave upward radiation flux at the surface            | -     | instantaneous | W/m <sup>2</sup>  |
| PMSL        | pressure at mean sea level                                | -     | instantaneous | Pa                |
| PS          | not reduced surface pressure                              | -     | instantaneous | Pa                |
| QV_2M       | 2m specific humidity                                      | 2     | instantaneous | kg/kg             |
| QV_S        | Specific humidity at the surface                          | -     | instantaneous | kg/kg             |
| RAIN_CON    | convective rain   | -     | accumulated   | kg/m <sup>2</sup> |
| RAIN_GSP    | stratiform rain   | -     | accumulated   | kg/m <sup>2</sup> |
| RHO_SNOW    | density of snow   | -     | instantaneous | kg/m <sup>3</sup> |
| RUNOFF_G    | ground runoff   | -     | accumulated   | kg/m <sup>2</sup> |
| RUNOFF_S    | surface runoff  | -     | accumulated   | kg/m <sup>2</sup> |
| RELHUM_2M   | 2m relative humidity                                      |       | instantaneous | %                 |
| SHFL_S      | surface sensible heat flux                                | -     | instantaneous | W/m <sup>2</sup>  |
| SNOW_CON    | convective snow   | -     | accumulated   | kg/m <sup>2</sup> |
| SNOW_GSP    | stratiform snow   | -     | accumulated   | kg/m <sup>2</sup> |
| SNOWLMT     | height of the snow fall limit in m above sea level        | -     | instantaneous | m                 |
| SOBS_RAD    | net short wave radiation flux at the surface              | -     | instantaneous | W/m <sup>2</sup>  |
| SWDIFDS_RAD | short wave diffuse downward radiation flux at the surface | -     | instantaneous | W/m <sup>2</sup>  |

|            |  |     |               |                   |
|------------|--|-----|---------------|-------------------|
| SWDIRS_RAD | short wave direct radiation flux at the surface  | -   | instantaneous | W/m <sup>2</sup>  |
| T_SNOW     | snow surface temperature                         | -   | instantaneous | K                 |
| THBS_RAD   | net long wave radiation flux at the surface      | -   | instantaneous | W/m <sup>2</sup>  |
| THDS_RAD   | downward long wave radiation flux at the surface | -   | instantaneous | W/m <sup>2</sup>  |
| TMAX_2M    | 2m maximum temperature                           | 2   | time interval | K                 |
| TMIN_2M    | 2m minimum temperature                           | 2   | time interval | K                 |
| TOT_PRECIP | total precipitation                              | -   | accumulated   | kg/m <sup>2</sup> |
| TQV        | vertical integrated water vapour                 | -   | instantaneous | kg/m <sup>2</sup> |
| T_2M       | 2m temperature                                   | 2   | instantaneous | K                 |
| T_SOIL     | soil temperature                                 | -   | instantaneous | K                 |
| U_10M      | 10m zonal wind speed                             | 10  | instantaneous | m/s               |
| VMAX_10M   | 10m maximum wind speed                           | 10  | time interval | m/s               |
| V_10M      | 10m meridional wind speed                        | 10  | instantaneous | m/s               |
| W_SNOW     | surface snow amount                              | 0   | instantaneous | kg/m <sup>2</sup> |
| WD_040     | 40m wind direction                               | 40  | instantaneous | m/s               |
| WD_060     | 60m wind direction                               | 60  | instantaneous | m/s               |
| WD_080     | 80m wind direction                               | 80  | instantaneous | m/s               |
| WD_100     | 100m wind direction                              | 100 | instantaneous | m/s               |
| WD_125     | 125m wind direction                              | 125 | instantaneous | m/s               |
| WD_150     | 150m wind direction                              | 150 | instantaneous | m/s               |
| WD_175     | 175m wind direction                              | 175 | instantaneous | m/s               |
| WD_200     | 200m wind direction                              | 200 | instantaneous | m/s               |
| WS_010     | 10m wind speed                                   | 10  | instantaneous | m/s               |
| WS_040     | 40m wind speed                                   | 40  | instantaneous | m/s               |
| WS_060     | 60m wind speed                                   | 60  | instantaneous | m/s               |
| WS_080     | 80m wind speed                                   | 80  | instantaneous | m/s               |
| WS_100     | 100m wind speed                                  | 100 | instantaneous | m/s               |
| WS_125     | 125m wind speed                                  | 125 | instantaneous | m/s               |
| WS_150     | 150m wind speed                                  | 150 | instantaneous | m/s               |
| WS_175     | 175m wind speed                                  | 175 | instantaneous | m/s               |
| WS_200     | 200m wind speed                                  | 200 | instantaneous | m/s               |

**Table 2:** 3D parameters

| <b>Parameter</b> | <b>Description</b>       | <b>Level</b> | <b>Type</b>   | <b>Unit</b>                    |
|------------------|--------------------------|--------------|---------------|--------------------------------|
| Q                | specific humidity        | 35 to 40     | instantaneous | kg/kg                          |
| T                | temperature              | 35 to 40     | instantaneous | K                              |
| TKE              | turbulent kinetic energy | 35 to 40     | instantaneous | m <sup>2</sup> /s <sup>2</sup> |
| U                | zonal wind speed         | 35 to 40     | instantaneous | m/s                            |
| V                | meridional wind speed    | 35 to 40     | instantaneous | m/s                            |