ANNEX 1

dimensions:

   altitude

   datetimeTC = dimension of datetimes of tropical cyclone tracks points, which are collocated with any RO profile;

5   numRO = maximum number of RO profiles collocated with single TC position

variables:

   int altitude(altitude);

10   :standard_name = "height";

   :long_name = "Altitude above geoid";

   :units = "m";

   :_CoordinateAxisType = "Height";

15   **int basin(datetimeTC);**

   :long_name = "Current basin";

   :flag_values = 1, 2, 3, 4, 5, 6, 7; **// int**

   :flag_meanings = "East_Pacific North_Atlantic North_Indian South_Atlantic South_Indian South_Pacific
Western_Pacific";

20

   double bending_angle(altitude, datetimeTC, numRO);

   :long_name = "Ionosphere corrected non-optimized bending angle";

   :units = "rad";

   :_FillValue = -9999.0; **// double**

25

   double bending_angle_climatology(altitude, datetimeTC, numRO);

   :long_name = "Climatological ionosphere corrected non-optimized bending angle";

   :units = "rad";

   :_FillValue = -9999.0; **// double**

30

   float datediff_RO_TC(datetimeTC, numRO);

   :long_name = "Time difference between TC and RO datetimes";

   :units = "s";

   :_FillValue = -9999.0f; **// float**

```
    int datetimeTC(datetimeTC);
        :_FillValue = -9999; // int
        :standard_name = "time";
        :long_name = "Datetime of TC track position";
        :_CoordinateAxisType = "Time";
        :units = "seconds since 1970-01-01 00:00:0.0";


    int dist2land(datetimeTC);
        :_FillValue = -9999; // int
        :standard_name = "dist2land";
        :long_name = "Current distance to land from current position";
        :units = "km";


    int dist_RO_TC(datetimeTC, numRO);
        :long_name = "Distance between TC and RO tangent point";
        :units = "km";
        :_FillValue = -9999; // int


    int landfall(datetimeTC);
        :_FillValue = -9999; // int
        :long_name = "Minimum distance to land over next 3 hours ( = 0 means landfall)";
        :units = "km";


    float latRO(datetimeTC, numRO);
        :standard_name = "latitude";
        :long_name = "Latitude of RO profile";
        :units = "degrees_north";
        :_FillValue = -9999.0f; // float


    float lonRO(datetimeTC, numRO);
        :standard_name = "longitude";
        :long_name = "Longitude of RO profile";
        :units = "degrees_east";
```

2

:_FillValue = -9999.0f; **// float**

70

float latTC(datetimeTC);
:_FillValue = -9999.0f; **// float**
:standard_name = "latitude";
:long_name = "TC latitude";
75   :units = "degrees_north";

float lonTC(datetimeTC);
:standard_name = "longitude";
:long_name = "TC longitude";
80   :units = "degrees_east";
:_FillValue = -9999.0f; **// float**

int nature(datetimeTC);
:long_name = "Nature of the cyclone";
85   :flag_values = 1, 2, 3, 4, 5, 6; **// int**
:flag_meanings   =   "Not_Reported   Disturbance   Tropical_System   Extratropical_System   Subtropical_System
MIXED_occurs_when_agencies_reported_inconsistent_types";

double pressure(altitude, datetimeTC, numRO);
90   :standard_name = "air_pressure";
:long_name = "Air pressure";
:units = "Pa";
:_FillValue = -9999.0; **// double**

95   **int QC(datetimeTC, numRO);**
:standard_name = "status_flag";
:long_name = "RO overall retrieval quality control";
:valid_range = 0, 1; **// int**
:flag_values = 0, 1; **// int**
100   :flag_meanings = "good bad";
:_FillValue = -9999; **// int**

3

double refractivity(altitude, datetimeTC, numRO);
:long_name = "Refractivity (N-units)";
105 :units = "1";
:_FillValue = -9999.0; // double

int RO_datetime(datetimeTC, numRO);
:standard_name = "time";
110 :calendar = "standard";
:long_name = "Datetime of RO profile";
:units = "seconds since 1970-01-01 00:00:0.0";
:_FillValue = -9999; // int

115 **char RO_ID(datetimeTC, charr=64, numRO);**
:long_name = "ID of collocated Radio Occultation profile, collocation criteria: 500 km, 6 hours";
:standard_name = "RO_ID";

int satellite(datetimeTC, numRO);
120 :long_name = "RO satellite name";
:flag_values = 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13; // int
:flag_meanings = "CHAMP CNOFS F3C-FM1 F3C-FM2 F3C-FM3 F3C-FM4 F3C-FM5 F3C-FM6 GRACE-A GRACE-
B METOP-A METOP-B SAC-C";

125 **double specific_humidity(altitude, datetimeTC, numRO);**
:standard_name = "specific_humidity";
:long_name = "Specific humidity";
:units = "kg kg**-1";

130 **double specific_humidity_climatology(altitude, datetimeTC, numRO);**
:standard_name = "specific_humidity";
:long_name = "Climatological specific humidity";
:units = "kg kg**-1";
:_FillValue = -9999.0; // double
135

int storm_dir(datetimeTC);

4

```
        :_FillValue = -9999; // int
        :long_name = "Storm translation direction (degrees east of north)";
        :units = "degrees";
140     :valid_min = 0; // int
        :valid_max = 360; // int


     int storm_speed(datetimeTC);
        :long_name = "Storm translation speed";
145     :units = "m s-1";
        :_FillValue = -9999; // int


     int subbasin(datetimeTC);
        :long_name = "Current subbasin";
150     :flag_values = 1, 2, 3, 4, 5, 6, 7, 8, 9; // int
        :flag_meanings = "Arabian_Sea Bay_of_Bengal Central_Pacific Caribbean_Sea Gulf_of_Mexico North_Atlantic
     Eastern_Australia Western_Australia No_subbasin_for_this_position";


     double temperature(altitude, datetimeTC, numRO);
155     :standard_name = "air_temperature";
        :long_name = "Air temperature";
        :units = "K";
        :_FillValue = -9999.0; // double


160  double temperature_climatology(altitude, datetimeTC, numRO);
        :standard_name = "air_temperature";
        :long_name = "Climatological air temperature";
        :units = "K";
        :_FillValue = -9999.0; // double
165

     int wmo_agency(datetimeTC);
        :long_name = "Official WMO agency";
        :flag_values = 1, 2, 3, 4, 5, 6, 7, 8, 9, 10; // int
        :flag_meanings = "Not_provided atcf bom hurdat_atl hurdat_epa nadi newdelhi reunion tokyo wellington";
170
```

5

int wmo_pres(datetimeTC);

:_FillValue = -9999; **//** int

:standard_name = "surface_air_pressure";

:long_name = "Minimum central pressure from official WMO agency";

175   :units = "Pa";

int wmo_wind(datetimeTC);

:_FillValue = -9999; **//** int

:long_name = "Maximum sustained wind speed from official WMO agency";

180   :units = "m s-1";

:note = "Wind speed averaging periods by agency: 1-min for US Agencies, 3-min for IMD, 10-min for JMA, BoM, La Reunion, Nadi and Wellington";

 global attributes:

185   :TC_name; **//** char

:Conventions = "CF-1.7";

:SID; **//** char

:season_of_the_start; **//** double