

## SUPPLEMENT

### DAILY FILE

Volcanic clouds' archive for volcanic eruptions with  $VEI \geq 4$  according to the Global Volcanism Program of Smithsonian in the period 2006-2018. Archive of SO<sub>2</sub> retrievals from AIRS, IASI (A&B), GOME-2 (A&B) sensors, CALIOP trajectories and RO profiles collocated with the volcanic cloud.

#### STRUCTURE OF THE NC FILE.

ONE NC FILE PER DAY.

dimensions:

AIRS\_lat = max number of rows for lat lon and SO<sub>2</sub> of AIRS

date\_AIRS = dimension of datetime for AIRS files → max number of columns

IASI\_lat = max number of rows for lat lon SO<sub>2</sub> height

date\_IASI = max number of columns for lat lon SO<sub>2</sub> and datetime of IASI because of Ascending and Descending trajectories.

GOME\_lat = max number of rows for lat lon SO<sub>2</sub> height

date\_GOME = dimension of datetime for GOME-2 files (composite GOME-2 A&B)

CALIOP\_lat = max number of rows for lat lon datetime height of VC, type of VC and filename for CALIOP files

CALIOP\_char = maximum filename character

CALIOP\_char2 = maximum type character

Sensors = number of collocated sensors

RO\_AIRS\_lat = num rows for lat, lon, date, bending angle, anomaly bending angle, temperature, pressure, refractivity, specific humidity, height VC

RO\_AIRS\_profile = num of columns

RO\_IASI\_lat = num rows for lat, lon, date, bending angle, anomaly bending angle, temperature, pressure, refractivity, specific humidity, height VC

RO\_IASI\_profile = num of columns

RO\_GOME\_lat = num rows for lat, lon, date, bending angle, anomaly bending angle, temperature, pressure, refractivity, specific humidity, height VC

RO\_GOME\_profile = num of columns

variables:

--AIRS--

```
double AIRS_lat(AIRS_lat, date_AIRS);
```

```
:standard_name = "latitude";
```

```
:long_name = "Latitude of AIRS acquisition";
```

```
:units = "degrees_north";
```

```
:_CoordinateAxisType = "Lat";
```

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

```
double AIRS_lon(AIRS_lat, date_AIRS);
```

```
:standard_name = "longitude";
```

```
:long_name = "Longitude of AIRS acquisition";
```

```
:units = "degrees_east";
```

```
:_CoordinateAxisType = "Lon";
```

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

```
int AIRS_date(date_AIRS);
```

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

```
:standard_name = "time";
```

```
:long_name = "Datetime of AIRS granule";
```

```
:_CoordinateAxisType = "Time";
```

```
:units = "seconds since 1970-01-01 00:00:0.0";
```

```
:calendar = "standard";
```

```
double AIRS_SO2(AIRS_lat, date_AIRS);
:standard_name = "so2_airs";
:long_name = "SO2 AIRS partial columns";
:units = "DU";
:_FillValue = -9999.0; // double
```

#### **--IASI--**

```
double IASI_lat(IASI_lat, date_IASI);
:standard_name = "latitude";
:long_name = "Latitude of IASI acquisition";
:units = "degrees_north";
:_CoordinateAxisType = "Lat";
:_FillValue = -9999.0; // double
```

```
double IASI_lon(IASI_lat, date_IASI);
:standard_name = "longitude";
:long_name = "Longitude of IASI acquisition";
:units = "degrees_east";
:_CoordinateAxisType = "Lon";
:_FillValue = -9999.0; // double
```

```
int IASI_date(date_IASI);
:_FillValue = -9999; // int
:standard_name = "time";
:long_name = "Datetime of IASI trajectory";
:_CoordinateAxisType = "Time";
:units = "seconds since 1970-01-01 00:00:0.0";
:calendar="standard";
```

```
double IASI_SO2(IASI_lat, date_IASI);
:standard_name = "so2_iasi";
:long_name = "SO2 IASI interpolated";
:units = "DU";
:_FillValue = -9999.0; // double
```

```
double IASI_height (IASI_lat, date_IASI)
:standard_name = "height_at_effective_cloud_top_defined_by_infrared_radiation";
:long_name = "Height of the VC automatic retrieval on IASI";
:note = "m from geoid surface";
:units="m";
:_FillValue = -9999.0; // double
```

#### **--GOME-2--**

```
double GOME_lat(GOME_lat, date_GOME);
:standard_name = "latitude";
:long_name = "Latitude of GOME-2 acquisition (composite GOME-2 A&B)";
:units = "degrees_north";
:_CoordinateAxisType = "Lat";
:_FillValue = -9999.0; // double
```

```
double GOME_lon(GOME_lat, date_GOME);
:standard_name = "longitude";
:long_name = "Longitude of GOME-2 acquisition (composite GOME-2 A&B)";
:units = "degrees_east";
:_CoordinateAxisType = "Lon";
```

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

```
int GOME_date(date_GOME);  
:_FillValue = -9999; // int  
:standard_name = "time";  
:long_name = "Datetime of GOME-2 A&B trajectory";  
:_CoordinateAxisType = "Time";  
:units = "seconds since 1970-01-01 00:00:0.0";  
:calendar="standard";
```

```
double GOME_SO2_1(GOME_lat, date_GOME);  
:standard_name = "so2_vcd_gome-2_a&b_low_troposphere";  
:long_name = "SO2 vertical column density GOME-2 A&B low troposphere (2.5 km)";  
:units = "DU";  
:_FillValue = -9999.0; // double
```

```
double GOME_SO2_2(GOME_lat, date_GOME);  
:standard_name = "so2_vcd_gome-2_a&b_mid_troposphere";  
:long_name = "SO2 vertical column density GOME-2 A&B mid troposphere (6 km)";  
:units = "DU";  
:_FillValue = -9999.0; // double
```

```
double GOME_SO2_3(GOME_lat, date_GOME);  
:standard_name = "so2_vcd_gome-2_a&b_low_stratosphere";  
:long_name = "SO2 vertical column density GOME-2 A&B low stratosphere (15 km)";  
:units = "DU";  
:_FillValue = -9999.0; // double
```

#### --CALIOP--

```
double CALIOP_lat(CALIOP_lat);  
:standard_name = "latitude";  
:long_name = "Latitude of CALIOP trajectory";  
:units = "degrees_north";  
:_CoordinateAxisType = "Lat";  
:_FillValue = -9999.0; // double
```

```
double CALIOP_lon(CALIOP_lat);  
:standard_name = "longitude";  
:long_name = "Longitude of CALIOP trajectory";  
:units = "degrees_east";  
:_CoordinateAxisType = "Lon";  
:_FillValue = -9999.0; // double
```

```
Int CALIOP_date (CALIOP_lat);  
:_FillValue = -9999; // int  
:standard_name = "time";  
:long_name = "Datetime of CALIOP trajectory";  
:_CoordinateAxisType = "Time";  
:units = "seconds since 1970-01-01 00:00:0.0";  
:calendar="standard";
```

```
char CALIOP_filename (CALIOP_lat, CALIOP_char);  
:standard_name = "filenamecal";  
:long_name = "Name of CALIOP file";
```

```
double CALIOP_height (CALIOP_lat, Sensors)
```

```
:standard_name = "height_at_cloud_top";
:long_name = "Height of the VC automatic retrieval on CALIOP backscatter";
:note= "m from geoid surface";
:units="m";
:_FillValue = -9999.0; // double
```

```
double CALIOP_type (CALIOP_lat, CALIOP_char2, CALIOP_type)
:standard_name = "status_flag";
:long_name = "Type of the VC retrieved from the CALIOP Vertical Feature Mask";
:flag_values = 2, 6, 9, 10
:flag_meaning = "dust elevated_smoke volcanic_ash sulfate/other"
:_FillValue = -9999.0; // double
```

#### **--RADIO OCCULTATIONS--**

```
double RO_AIRS_lat(RO_AIRS_lat, RO_AIRS_profile);
:standard_name = "latitude";
:long_name = "Latitude of RO profile collocated with AIRS";
:units = "degrees_north";
:_CoordinateAxisType = "Lat";
:_FillValue = -9999.0; // double
```

```
double RO_AIRS_lon(RO_AIRS_lat, RO_AIRS_profile);
:standard_name = "longitude";
:long_name = "Longitude of RO profile collocated with AIRS";
:units = "degrees_east";
:_CoordinateAxisType = "Lon";
:_FillValue = -9999.0; // double
```

```
int RO_AIRS_date (RO_AIRS_lat, RO_AIRS_profile);
:_FillValue = -9999; // int
:standard_name = "time";
:long_name = "Datetime of RO profile collocated with AIRS";
:_CoordinateAxisType = "Time";
:units = "seconds since 1970-01-01 00:00:0.0";
:calendar="standard";
```

```
double RO_AIRS_bending_angle(RO_AIRS_lat, RO_AIRS_profile);
:long_name = "Ionospheric corrected non-optimized bending angle of profiles collocated with AIRS";
:units = "rad";
:_FillValue = -9999.0; // double
```

```
double RO_AIRS_anomaly_bending_angle(RO_AIRS_lat, RO_AIRS_profile);
:long_name = "Bending angle anomaly of profiles collocated with AIRS";
:units = "percent";
:_FillValue = -9999.0; // double
```

```
double RO_AIRS_temperature(RO_AIRS_lat, RO_AIRS_profile);
:standard_name = "air_temperature";
:long_name = "Air temperature";
:units = "K";
:_FillValue = -9999.0; // double
```

```
double RO_AIRS_pressure(RO_AIRS_lat, RO_AIRS_profile);
:standard_name = "air_pressure";
:long_name = "Air pressure";
:units = "Pa";
```

```

:_FillValue = -9999.0; // double

double RO_AIRS_refractivity(RO_AIRS_lat, RO_AIRS_profile);
:standard_name = "refractivity";
:long_name = "Refractivity (N-units)";
:units = "1";
:_FillValue = -9999.0; // double

double RO_AIRS_specific_humidity (RO_AIRS_lat, RO_AIRS_profile);
:standard_name = "specific_humidity";
:long_name = "Specific humidity";
:units = "kg kg**-1";
:_FillValue = -9999.0; // double

double RO_AIRS_heightVC(RO_AIRS_profile)
:standard_name = "height_at_cloud_top";
:long_name = "Height of the VC automatic retrieval on RO bending angle anomaly";
:note = "m from geoid surface";
:units="m";
:_FillValue = -9999.0; // double

double RO_IASI_lat(RO_IASI_lat, RO_IASI_profile);
:standard_name = "latitude";
:long_name = "Latitude of RO profile collocated with IASI";
:units = "degrees_north";
:_CoordinateAxisType = "Lat";
:_FillValue = -9999.0; // double

double RO_IASI_lon(RO_IASI_lat, RO_IASI_profile);
:standard_name = "longitude";
:long_name = "Longitude of RO profile collocated with IASI";
:units = "degrees_east";
:_CoordinateAxisType = "Lon";
:_FillValue = -9999.0; // double

int RO_IASI_date (RO_IASI_lat, RO_IASI_profile);
:_FillValue = -9999; // int
:standard_name = "time";
:long_name = "Datetime of RO profile collocated with IASI";
:_CoordinateAxisType = "Time";
:units = "seconds since 1970-01-01 00:00:0.0";
:calendar="standard";

double RO_IASI_bending_angle(RO_IASI_lat, RO_IASI_profile);
:long_name = "Ionospheric corrected non-optimized bending angle of profile collocated with IASI";
:units = "rad";
:_FillValue = -9999.0; // double

double RO_IASI_anomaly_bending_angle(RO_IASI_lat, RO_IASI_profile);
:long_name = "Bending angle anomaly of profile collocated with IASI";
:units = "percent";
:_FillValue = -9999.0; // double

double RO_IASI_temperature(RO_IASI_lat, RO_IASI_profile);
:standard_name = "air_temperature";
:long_name = "Air temperature";

```

```

:units = "K";
:_FillValue = -9999.0; // double

double RO_IASI_pressure(RO_IASI_lat, RO_IASI_profile);
:standard_name = "air_pressure";
:long_name = "Air pressure";
:units = "Pa";
:_FillValue = -9999.0; // double

double RO_IASI_refractivity(RO_IASI_lat, RO_IASI_profile);
:standard_name = "refractivity";
:long_name = "Refractivity (N-units)";
:units = "1";
:_FillValue = -9999.0; // double

double RO_IASI_specific_humidity (RO_IASI_lat, RO_IASI_profile);
:standard_name = "specific_humidity";
:long_name = "Specific humidity";
:units = "kg kg**-1";
:_FillValue = -9999.0; // double

double RO_IASI_heightVC(RO_IASI_profile)
:standard_name = "height_at_cloud_top";
:long_name = "Height of the VC automatic retrieval on RO bending angle anomaly";
:note = "m from geoid surface";
:units="m";
:_FillValue = -9999.0; // double

double RO_GOME_lat(RO_GOME_lat, RO_GOME_profile);
:standard_name = "latitude";
:long_name = "Latitude of RO profile collocated with GOME-2";
:units = "degrees_north";
:_CoordinateAxisType = "Lat";
:_FillValue = -9999.0; // double

double RO_GOME_lon(RO_GOME_lat, RO_GOME_profile);
:standard_name = "longitude";
:long_name = "Longitude of RO profile collocated with GOME-2";
:units = "degrees_east";
:_CoordinateAxisType = "Lon";
:_FillValue = -9999.0; // double

int RO_GOME_date (RO_GOME_lat, RO_GOME_profile);
:_FillValue = -9999; // int
:standard_name = "time";
:long_name = "Datetime of RO profile collocated with GOME-2";
:_CoordinateAxisType = "Time";
:units = "seconds since 1970-01-01 00:00:0.0";
:calendar="standard";

double RO_GOME_bending_angle(RO_GOME_lat, RO_GOME_profile);
:long_name = "Ionospheric corrected non-optimized bending angle of profile collocated with GOME-2";
:units = "rad";
:_FillValue = -9999.0; // double

double RO_GOME_anomaly_bending_angle(RO_GOME_lat, RO_GOME_profile);

```

```
:long_name = "Bending angle anomaly of profile collocated with GOME-2";  
:units = "percent";  
:_FillValue = -9999.0; // double
```

```
double RO_GOME_temperature(RO_GOME_lat, RO_GOME_profile);  
:standard_name = "air_temperature";  
:long_name = "Air temperature";  
:units = "K";  
:_FillValue = -9999.0; // double
```

```
double RO_GOME_pressure(RO_GOME_lat, RO_GOME_profile);  
:standard_name = "air_pressure";  
:long_name = "Air pressure";  
:units = "Pa";  
:_FillValue = -9999.0; // double
```

```
double RO_GOME_refractivity(RO_GOME_lat, RO_GOME_profile);  
:standard_name = "refractivity";  
:long_name = "Refractivity (N-units)";  
:units = "1";  
:_FillValue = -9999.0; // double
```

```
double RO_GOME_specific_humidity (RO_GOME_lat, RO_GOME_profile);  
:standard_name = "specific_humidity";  
:long_name = "Specific humidity";  
:units = "kg kg**-1";  
:_FillValue = -9999.0; // double
```

```
double RO_GOME_heightVC(RO_GOME_profile)  
:standard_name = "height_at_cloud_top";  
:long_name = "Height of the VC automatic retrieval on RO bending angle anomaly";  
:note = "m from geoid surface";  
:units="m";  
:_FillValue = -9999.0; // double
```

## METADATA/Attributes

### Reference to literature

```
:volcano_name; // char  
:VEI; // char  
:eruption_start_day; // char  
:eruption_end_day; // char  
:volcano_lat; // char  
:volcano_lon; // char  
:retrieval_algorithm_AIRS; // char  
:reference_1_AIRS; // char  
:retrieval_algorithm_IASI; // char  
:reference_1_IASI; // char  
:reference_2_IASI; // char  
:retrieval_algorithm_GOME; // char  
:reference_1_GOME; // char  
:reference_2_GOME; // char
```

## VOLCANO FILE

Volcanic clouds' archive for volcanic eruptions with  $VEI \geq 4$  according to the Global Volcanism Program of Smithsonian in the period 2006-2018. Archive of  $SO_2$  retrievals from AIRS, IASI (A&B), GOME-2 (A&B) sensors, CALIOP trajectories and RO profiles collocated with the volcanic cloud.

STRUCTURE OF THE NC FILE.  
ONE NC FILE PER VOLCANO.

dimensions:

AIRS\_lat = max number of rows for lat lon and  $SO_2$  of AIRS

date\_AIRS = dimension of datetime for AIRS files → max number of columns

IASI\_lat = max number of rows for lat lon  $SO_2$  height

date\_IASI = max number of columns for lat lon  $SO_2$  and datetime of IASI because of Ascending and Descending trajectories.

GOME\_lat = max number of rows for lat lon  $SO_2$  height

date\_GOME = dimension of datetime for GOME-2 files (composite GOME-2 A&B)

CALIOP\_lat = max number of rows for lat lon datetime height of VC, type of VC and filename for CALIOP files

CALIOP\_char = maximum filename character

CALIOP\_char2 = maximum type character

Sensors = number of collocated sensors

RO\_lat = num rows for lat, lon, date, bending angle, anomaly bending angle, temperature, pressure, refractivity, specific humidity, height VC

RO\_profile = num of columns

variables:

**--AIRS--**

```
double AIRS_lat(AIRS_lat, date_AIRS);
```

```
:standard_name = "latitude";
```

```
:long_name = "Latitude of AIRS acquisition";
```

```
:units = "degrees_north";
```

```
:_CoordinateAxisType = "Lat";
```

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

```
double AIRS_lon(AIRS_lat, date_AIRS);
```

```
:standard_name = "longitude";
```

```
:long_name = "Longitude of AIRS acquisition";
```

```
:units = "degrees_east";
```

```
:_CoordinateAxisType = "Lon";
```

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

```
int AIRS_date(date_AIRS);
```

```
:standard_name = "time";
```

```
:long_name = "Datetime of AIRS granule";
```

```
:_CoordinateAxisType = "Time";
```

```
:units = "seconds since 1970-01-01 00:00:0.0";
```

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

```
:calendar="standard";
```

```
double AIRS_SO2(AIRS_lat, date_AIRS);
```

```
:standard_name = "so2_airs";
```

```
:long_name = "SO2 AIRS partial columns";
```

```
:units = "DU";
```

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



**--IASI--**

```
double IASI_lat(IASI_lat, date_IASI);
:standard_name = "latitude";
:long_name = "Latitude of IASI acquisition";
:units = "degrees_north";
:_CoordinateAxisType = "Lat";
:_FillValue = -9999.0; // double
```

```
double IASI_lon(IASI_lat, date_IASI);
:standard_name = "longitude";
:long_name = "Longitude of IASI acquisition";
:units = "degrees_east";
:_CoordinateAxisType = "Lon";
:_FillValue = -9999.0; // double
```

```
int IASI_date(date_IASI);
:standard_name = "time";
:long_name = "Datetime of IASI trajectory";
:_CoordinateAxisType = "Time";
:units = "seconds since 1970-01-01 00:00:0.0";
:calendar="standard";
:_FillValue = -9999; // int
```

```
double IASI_SO2(IASI_lat, date_IASI);
:standard_name = "so2_iasi";
:long_name = "SO2 IASI interpolated";
:units = "DU";
:_FillValue = -9999.0; // double
```

```
double IASI_height (IASI_lat, date_IASI)
:standard_name = "height_at_effective_cloud_top_defined_by_infrared_radiation";
:long_name = "Height of the VC automatic retrieval on IASI";
:note = "m from geoid surface";
:units="m";
:_FillValue = -9999.0; // double
```

**--GOME-2--**

```
double GOME_lat(GOME_lat, date_GOME);
:standard_name = "latitude";
:long_name = "Latitude of GOME-2 acquisition (composite GOME-2 A&B)";
:units = "degrees_north";
:_CoordinateAxisType = "Lat";
:_FillValue = -9999.0; // double
```

```
double GOME_lon(GOME_lat, date_GOME);
:standard_name = "longitude";
:long_name = "Longitude of GOME-2 acquisition (composite GOME-2 A&B)";
:units = "degrees_east";
:_CoordinateAxisType = "Lon";
:_FillValue = -9999.0; // double
```

```
int GOME_date(date_GOME);
:_FillValue = -9999; // int
:standard_name = "time";
```

```

:long_name = "Datetime of GOME-2 A&B trajectory";
:_CoordinateAxisType = "Time";
:units = "seconds since 1970-01-01 00:00:0.0";
:calendar="standard";

double GOME_SO2_1(GOME_lat, date_GOME);
:standard_name = "so2_vcd_gome-2_a&b_low_troposphere";
:long_name = "SO2 vertical column density GOME-2 A&B low troposphere (2.5 km)";
:units = "DU";
:_FillValue = -9999.0; // double

double GOME_SO2_2(GOME_lat, date_GOME);
:standard_name = "so2_vcd_gome-2_a&b_mid_troposphere";
:long_name = "SO2 vertical column density GOME-2 A&B mid troposphere (6 km)";
:units = "DU";
:_FillValue = -9999.0; // double

double GOME_SO2_3(GOME_lat, date_GOME);
:standard_name = "so2_vcd_gome-2_a&b_low_stratosphere";
:long_name = "SO2 vertical column density GOME-2 A&B low stratosphere (15 km)";
:units = "DU";
:_FillValue = -9999.0; // double

--CALIOP--
double CALIOP_lat(CALIOP_lat);
:standard_name = "latitude";
:long_name = "Latitude of CALIOP trajectory";
:units = "degrees_north";
:_CoordinateAxisType = "Lat";
:_FillValue = -9999.0; // double

double CALIOP_lon(CALIOP_lat);
:standard_name = "longitude";
:long_name = "Longitude of CALIOP trajectory";
:units = "degrees_east";
:_CoordinateAxisType = "Lon";
:_FillValue = -9999.0; // double

Int CALIOP_date (CALIOP_lat);
:_FillValue = -9999; // int
:standard_name = "time";
:long_name = "Datetime of CALIOP trajectory";
:_CoordinateAxisType = "Time";
:units = "seconds since 1970-01-01 00:00:0.0";
:calendar="standard";

char CALIOP_filename (CALIOP_lat, CALIOP_char);
:standard_name = "filenamecal";
:long_name = "Name of CALIOP file";

double CALIOP_height (CALIOP_lat, Sensors)
:standard_name = "height_at_cloud_top";
:long_name = "Height of the VC automatic retrieval on CALIOP backscatter";
:note= "m from geoid surface";
:units="m";
:_FillValue = -9999.0; // double

```

```
double CALIOP_type (CALIOP_lat, CALIOP_char2, CALIOP_type)
:standard_name = "status_flag";
:long_name = "Type of the VC retrieved from the CALIOP Vertical Feature Mask";
:flag_values = 2, 6, 9, 10
:flag_meaning = "dust elevated_smoke volcanic_ash sulfate/other"
:_FillValue = -9999.0; // double
```

**--RADIO OCCULTATIONS--**

```
double RO_lat(RO_lat, RO_profile);
:standard_name = "latitude";
:long_name = "Latitude of RO profile";
:units = "degrees_north";
:_CoordinateAxisType = "Lat";
:_FillValue = -9999.0; // double
```

```
double RO_lon(RO_lat, RO_profile);
:standard_name = "longitude";
:long_name = "Longitude of RO profile";
:units = "degrees_east";
:_CoordinateAxisType = "Lon";
:_FillValue = -9999.0; // double
```

```
int RO_date (RO_lat, RO_profile);
:_FillValue = -9999; // int
:standard_name = "time";
:long_name = "Datetime of RO profile";
:_CoordinateAxisType = "Time";
:units = "seconds since 1970-01-01 00:00:0.0";
:calendar="standard";
```

```
double RO_bending_angle(RO_lat, RO_profile);
:long_name = "Ionospheric corrected non-optimized bending angle of profiles";
:units = "rad";
:_FillValue = -9999.0; // double
```

```
double RO_anomaly_bending_angle(RO_lat, RO_profile);
:long_name = "Bending angle anomaly of profiles";
:units = "percent";
:_FillValue = -9999.0; // double
```

```
double RO_temperature(RO_lat, RO_profile);
:standard_name = "air_temperature";
:long_name = "Air temperature";
:units = "K";
:_FillValue = -9999.0; // double
```

```
double RO_pressure(RO_lat, RO_profile);
:standard_name = "air_pressure";
:long_name = "Air pressure";
:units = "Pa";
:_FillValue = -9999.0; // double
```

```
double RO_refractivity(RO_lat, RO_profile);
:standard_name = "refractivity";
:long_name = "Refractivity (N-units)";
```

```
:units = "1";  
:_FillValue = -9999.0; // double
```

```
double RO_specific_humidity (RO_lat, RO_profile);  
:standard_name = "specific_humidity";  
:long_name = "Specific humidity";  
:units = "kg kg**-1";  
:_FillValue = -9999.0; // double
```

```
double RO_heightVC(RO_profile)  
:standard_name = "height_at_cloud_top";  
:long_name = "Height of the VC automatic retrieval on RO bending angle anomaly";  
:note = "m from geoid surface";  
:units="m";  
:_FillValue = -9999.0; // double
```

#### METADATA/Attributes

##### Reference to literature

```
:volcano_name; // char  
:VEI; // char  
:eruption_start_day; // char  
:eruption_end_day; // char  
:volcano_lat; // char  
:volcano_lon; // char  
:retrieval_algorithm_AIRS; // char  
:reference_1_AIRS; // char  
:retrieval_algorithm_IASI; // char  
:reference_1_IASI; // char  
:reference_2_IASI; // char  
:retrieval_algorithm_GOME; // char  
:reference_1_GOME; // char  
:reference_2_GOME; // char
```