

NAME

findRC.pl – Finds the range changes times and produces the FGM uncal files for them.

SYNOPSIS

```
findRC.pl --month month [--day day] [--year year] [--inboard] [--spacecraft spacecraft]
[--(no)log] [--all] [--All] [--centered] [--reverse] [--ICL] [--help]
```

DESCRIPTION

This script finds the range changes times and produces the 5 minutes FGM *uncal* files used for calibration. The times for the range changes are read from the log files produced by the **listfgm.pl** script. Then the FGM *uncal* files for the 5 minutes immediately before and immediately after the range change are produced. Compressed input files are transparently managed. By default only increasing range changes are processed. This can be changed with the **-reverse** option.

OPTIONS

-m *month*, **--month** *month*

The month. One or two digits. Mandatory argument.

-d *day*, **--day** *day*

The day. One or two digits. Without this option all days of the month are processed.

-y *year*, **--year** *year*

The year. One or two digits. Default is the current year.

-s *spacecraft*, **--spacecraft** *spacecraft*

The spacecraft number (1–4) or list of spacecraft e.g **-s** '1 3 4'. Default all spacecraft.

-a, **--all**

If given, all range changes are processed. If omitted, the range changes from range 2 and range changes to and from range 6 and 7 are omitted.

-A, **--All**

Pass the option **'-a'** to fgmtel. As a result all vectors, including range changes, calibration mode, and eclipses data will be produced. See the fgmtel man page. Default is to produced only non-marked vectors.

-c, **--centered**

If given, also 5 minutes intervals centered on the range changes are produced. By default only the before and after intervals are produced.

-i, **--inboard**

Produce uncal files also for the inboard sensors.

-I, **--ICL**

Use the Imperial College London raw data. Default is to use the ESTEC raw data.

-r, **--reverse**

Process decreasing range changes instead of the default increasing.

-j, **--jump** *number of ranges*

By default *number of ranges* is set to 1, i.e consecutive ranges. However, since 2014 Cluster 1 begun jumping over one range (e.g. going directly from r3 to r5 before falling to r4). Setting *number of ranges* to 2 identifies these anomalous range changes.

-l, **--log**

Record the run to dailycal log file. Default is enabled. Can be disabled using the **--nolog** option.

-h, **-?**, **--help**

Prints a brief help message.

DEPENDENCES

This script uses the following:

```
ddscut ,
fgmtel ,
fgmcut ,
fgmvec .
```

ENVIRONMENT

FGMROOT

Root for the FGM calibration directory structure. Default to */home/FGM/* if not set.

SATTPATH

Path to orbit parameters files. Default to *\$FGMROOT/log/atorb/* if not set.

FGMPATH

Path to calibration files (*.fgmcal and *.cfgnew). Default to *\$FGMROOT/data/dcalf/* if not set.

FILES

\$FGMROOT/data/raw/ICL/\$YY_\$MM/ – Imperial input path

\$FGMROOT/data/raw/ESTEC/cluster\$sc/[n/b]sd_\$sc/ – ESTEC (default) input path

\$FGMROOT/log/cd_log/\$YY_\$MM/ – path to log files

\$FGMROOT/data/uncal/\$YY_\$MM/ – output path

C\$sc_\$YY\$MM\$DD_B.[NS/BS](.gz) – Imperial input files

\$YY\$MM\$DD.f[n/b].?a\$sc(.gz) – ESTEC (default) input files

C\$sc_\$YY\$MM\$DD_B.[NS/BSNS]log – log files

c\$sc_\$YY\$MM\$DD_\$hh\$mmr\$sold_range to \$new_range.uncal – pre range change uncal files

c\$sc_\$YY\$MM\$DD_\$hh\$mmr\$new_range f \$old_range.uncal – post range change uncal files

c\$sc_\$YY\$MM\$DD_\$hh\$mmr\$new_range and \$old_range.uncal – mixed range change uncal files

\$FGMROOT/log/dailycal/dailycal_\$YY\$MM.log – Dailycal log file.

AUTHOR

Dragos Constantinescu <d.constantinescu@tu-bs.de>