

Multi-Channel Filtering procedure

First convert the original amplitude data to linear intensity using GAMMA.

e.g.

```
par_EORC_PALSAR_geo LED-ALPSRP183297190-H1.5GUA
20090703.hh.mli.par 20090703.dem_par IMG-HH-ALPSRP183297190-
H1.5GUA 20090703.hh.mli
```

```
par_EORC_PALSAR_geo LED-ALPSRP183297190-H1.5GUA
20090703.hv.mli.par 20090703.dem_par IMG-HV-ALPSRP183297190-
H1.5GUA 20090703.hv.mli
```

Alternatively copy `mli_script` to the directory and enter a “fileroot” name (i.e the name you want to use for the files e.g. P443_F7170_C12. `mli_script` should read the long JAXA names and rename the output files to `fileroot.hh.mli` and `fileroot.hv.mli`) at the prompt. If you are working with ScanSAR single polarized data use `mli_HHonly_script` instead.

I like to copy the new files to a new subdirectory `./mcf_files` or `./analysis`

Envi needs to be running (?not sure why?) and the files need to be geo-referenced first. I do this manually with settings “Network IEEE”, “floating point” and “zero” offset. Edit map attributes using values given by the ALOS amplitude image (add 6.25 to x coordinate and -6.26 to y coordinate (if south- check if North maybe add – map info displayed in available bands should be the same) because GAMMA .mli use tie point (1.5,1.5)

Edit `mcf.data` to load the files (intensity .mli files obtained using GAMMA – or at least they should be in floating point format) you want to process.

Change the 1st line directory to the one you are using for "data directory".

The first number is the number of bands (images) the second is the windowing size (2 is good).

Edit other files to give the right path name for the codes involved – these should all start with an OPENR command. (`checkfiles.pro`, `mcf.pro`, `meanRI.pro`)

`mcf..start` is a script that runs `checkfiles.pro` (runs some checks for file compatability), `meanRI.pro` (window averaging) and `mcf.pro`. The routines `mcf.pro` and `meanRI.pro` use `dropout.pro` to repair zeros within the data.

`mcf_4files.start` is just another example using 4 files .

Then compile the files (NB. directory names will have to be changed).

e.g.

```
.run /home/home_dir/idl_codes/run_mcf_start.pro
.run /home/home_dir/idl_codes/checkfiles.pro
.run /home/home_dir/idl_codes/meanRI.pro
.run /home/home_dir/idl_codes/mcf.pro
.run /home/home_dir/idl_codes/dropout.pro
```

(N.B. the “.” at the start is needed).

When all are compiled type `mcf_start` which will initiate the script `mcf_start.pro`.

If you make an error in `mcf.data` and it can't find a file you may have to use

```
Close, 1
```

To close an open file before continuing.

Output should go to your "data" directory (as defined at the top of `mcf.data`) and have the same `rootnames` but with a `.mcf` extension.

In my experience it is best to edit the input header of one file manually. Use Host (Intel), Floating point and BSQ. On map info the tie point values should be set to 1.5 (different to the ALOS native format which uses 1.0 – for accuracy need to subtract 6.25 m to easting (? Why) and add 6.25 to a southing or subtract 6.25 from northing (? Have not checked)). Other `.mcf` header files can then be edited after opening in Envi by right clicking the file name in "available band list" and using the "input header info from" button in the window that opens.

For `.mli` files Network (IEEE) is used instead, but just editing this in the `.mcf` file does not work – trying to open the resulting file gives an error.

For FBD files use Envi `basic_tools/band-math` to create the 3rd channel HH/HV file.

MW 27/01/2010

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