Must have run SuperMasterCoreg.sh first

Read Inputs

Pairs File

Parameters File

[List of Processed]:
-list=filename (as MASMATE_SLVDATE) or
-f to check from Geocoded/Mode

FUNCTIONS_FOR_CIS.sh
(script with fcts;
must be in PATH)

PATHTOMASK
(where mask are stored) e.g.:
../SAR_SM/MASK/...

DATAPATH
(where data are stored) e.g.:
/Volumes/.../SAR/CSL
=> INPUTDATA is
DATAPATH/SAT/TRK/
CROPDIR

DEMDIR
(where DEM are stored) e.g.:
/Volumes/.../DEM/SRTM30/
ALL

PROROOTHPATH =
from ParametersFile.txt
PROPATH =
PROROOTHPATH/SAT/TRK
RUNDIR =
PROPATH/
SMCROPDIR_Zoom_ML

RESAMPDATAPATH
(where data resampled on
SM are stored) e.g.:
/Volumes/.../SAR_SM/
RESAMPLED
=> OUTPUTDATA is
RESAMPDATAPATH/SAT/
TRK/SMCROPDIR

MASSPROCESSPATH =
from ParametersFile.txt
MASSPROCESSPATHLONG
=
MASSPROCESSPATH/SAT/
TRK/
SMCROPDIR_ZOOM_ML

PREPARE

DEM

Amplitude and Coeg

for all PAIRS in Pairs_to_process_RunDate_RandomNr.txt

Define:
MAS and SLV = (counter of processed pairs i)
MASNAME and SLVNAME = date of master and slave of pair (also for S1)
MASDIR and SLVDIR = date or S1_name of master and slave of pair
date.csl or S1_name.csl of master and slave of pair

if not
SLV = SUPERMASTER
and not S1 WideSwath

YES: swap SLV and SUPERMASTER to benefit from existing processings:
SLV = MAS MAS = SUPERMASTER
SLVNAME = MASNAME MASNAME = SUPERMASNAME
SLVDIR = MASDIR MASDIR = SUPERMASDIR

test if pair
not processed yet in
MASSPROCESSPATHLONG
nor MAINRUNDIR

If Yes, skip pair

Define and make RUNDIR = RUNDIR/MASNAME_SLVNAME

cd RUNDIR

If S1 WS and
CROPKML exist

NO: initInSAR with :
INPUTDATA/MASDIR INPUTDATA/SLVDIR
RUNDIR/i12 and POL

YES: initInSAR with :
INPUTDATA/MASDIR INPUTDATA/SLVDIR
RUNDIR/i12 and POL and CROPKML

Define
POLMAS and POLSLV = Master and Slave polarisation

Test if
POLMAS = POLSLV

NO: warning.
May want to add here a skipping of the pair ?

if
MAS is not SUPERMASTER
or if SAT is
S1 & WS

NO: i.e. one can benefit
from what is already
computed by
SuperMasterCoreg.sh

YES : i.e. one need to recompute
each pair in full, although some
no-WS can benefit from SM
coreg, other can skip it

if S1 WS

NO:
Update path to Global Master:
OUTPUTDATA/SUPERMASTER_MASNAME/i12

YES:
skip Amplitude

if S1 not
WS

NO:

Yes : Define
FORCECOREG=NO

if SAT
= ENV, TSX or
TDX

NO

YES

cd RUNDIR/i12/InSARProducts

if
S1 and not
WS

Yes : Define
SUPERMASNAMEBAK
= SUPERMASNAME
SUPERMASNAME
= SUPERMASTER

No good orbits, must
CoarseCoreg
Define FORCECOREG=YES

No: i.e. despite good
orbits, prefer to
CoarseCoreg
Define FORCECOREG=YES

if
CCOHWIN
= 0

Yes: i.e. benefit from
good orbits to skip
CoarseCoreg
Define FORCECOREG=NO

link from
OUTPUTDATA/SUPERMASTER_SLVNAME/i12/InSARProducts
to
RUNDIR/i12/InSARPRoducts
the following products :
SLVNAME.SLVPOL.interpolated
SLVNAME.SLVPOL.mod
And copy master amplitude from
OUTPUTDATA/ModulesForCoreg:
MASNAME.MASPOL.mod (i.e. SUPERMASTER)

MakeAmpliImgAndPlot

Change Az and Rge Reduction factor (i.e. keep original form of pixel) for amplitude image reduction for coregistration

cd RUNDIR/i12

amplitudeImageReduction of Mas and/or SLV
Make amplitude figures

cd RUNDIR/i12

cd RUNDIR/i12

if ZOOM
= 1

YES:
S1Coregistration

NO :
S1Coregistration -d

cd RUNDIR/i12/TextFiles

update InSARParameters.txt :
Get the beginning of InSARParameters.txt from
OUTPUTDATA/SUPERMASTER_SLVNAME
(till Global master to master InSAR processing)
with the end of InSARParameters.txt from
RUNDIR (from Global master to master InSAR processing)
then update paths to mas and slv amplitudes and interpolated

test
FORCECOREG

NO

YES

CoarseCoregTestQuality

Update coarse coregistration parameters

Compute
Coarse Coregistration

< 4 :
decrease
coarse coreg
threshold

Development tools : Try
coreg. with Fiji . If failed:
skip and see what happen

Check nr
Anchor Points
(AP)

< 10

Test
nr attempts

>= 4

< 4 : Compute
Coarse Coregistration

Empty:
Warning

Check
coregistration
sigma

>2

Test
nr attempts

>3:
suppose OK

<1 : suppose
OK

<2

Test **ratio**
(100 AP) /
(nr candiate AP)

>5:
suppose OK

Update Fine Coregistration parameters

Fine Coregistration

NO :
STOP

Check if
nr of AP > 4

interpolation

Change ML factor for interferometric products.
Keep original form OR multiply by ratio Rge anAz of pixel for sure final product

InSAR and Unwrap

GeoCode and Log

SuperMaster_MassProc_FlowChart_Part3_Ampli_COREG.graffle
V Distro 1.6.1 – Sep 1 2020

NOTES:

1) Some names are shorten here for the sake of clarity:

SAT is SATDIR in scripts
TRK is TRKDIR in scripts

2) Possible issues:

- Crop using kml for sat other than S1 is not tested yet. Process is hence artificially stopped in script.

- When Coarse Coregistration fails 3 times, it attempts to compute it with Fiji. This is an option for développement purposes and may not work…

- May want to add skipping of pair processing when polarisation of MAS and SLV differ. See red box.