

## READING

- Reads every channel (**readMain** + **readCross**); Gives vectors for all channels.
  - No further processing.
  - Output On the Workspace:
    - **HHx, HVx, VVx, HHHVx, HHVVx, HVVVx** (**x = specific data set**)
- 

## CM

- Assumes channel's data available in the workspace.
  - Builds a 3x3xl matrix with all the covariance matrices, for every pixel (**CovMat**).
  - NB: l = number of pixels.
  - NB: It must work for matrices of general dimensions because after despeckling the dimensions of the matrices will change.
  - Output on the workspace:
    - **Cmx** (**x = specific data set**)
- 

## IMAGES

- Two different sections for the unspeckled and normal case to select manually.
  - Normal
    - Assumes channels' data available in the workspace.
    - Takes only **HH**, **HV**, and **VV** and builds 3 1024x1024 matrices out of them.
    - Scales data (**Scaling** + **Norm**).
    - Creates a 1024x1024x3 matrix for imshow.
    - Displays an RGB-coded picture.
  - Unspeckled
    - Assumes channels' data available in the workspace as matrices.
    - Scaling must work only in the inner 1022x1022 part of the matrices since the borders are set to 0 and must remain like that.
    - NB: Since the despeckle section removes the borders of the pictures, it is added again here.
  - Produces useless data on the workspace! 😞
- 

## ENL

- Assumes channels' data available
- Select 3 homogeneous areas and computes the ENL for these 3 areas in the three channels **hhhh**, **hvhv**, **vvvv**, returning a vector with 9 estimations of ENL (**EqNLooks**).
- Averages the previous 9 values and rounds the result.

- For the despeckled data the borders of the pictures must be added again.
  - Output on the workspace
    - **n = ENL**
- 

## DESPECKLE

- Filters every channel (**BoxFilter**).
  - NB: Removes the borders of the pictures because it makes further processing easier, so it produces 1022x1022 matrices.
  - Output on the workspace:
    - HHxf, HVxf, VVxf, HHHVxf, HHVVxf, HVVVxf (x = specific data set)
- 

## CHANGES

- Assumes data, **ENL**, and covariance matrices are available.
- Creates a 1024x1024 (or 1022x1022 for despeckled data) matrix with determinants of the covariance matrices for each pixel, for two pictures (**CmIm**).
- Computes  $\ln Q$  and  $-2^*Q^*\ln Q$  and displays them (**Display**).
- NB:  $-\ln Q/32$  and  $-2^*Q^*\ln Q/32$  are actually displayed.
- Select a no-change area (the forest) and plot the histogram for  $-2^*Q^*\ln Q$  (**NCD**).
- Determines a threshold from the no-change distribution (**Threshold**).
- Applies the threshold to  $-2^*Q^*\ln Q$  and displays the result.