READING

- Reads every channel (`readMain` + `readCross`); Gives vectors for all channels.
- No further processing.

- 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.

- On the workspace:
  - `Cmx` (x = specific data set)

IMAGES

- Two different sections for the unspeckled and normal case to select manually.
- <u>Normal</u>
  - 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.

- <u>Unspeckled</u>
  - Assumes channels' data available in the workspace <u>as matrices</u>.
  - 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.

- 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.

- 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 lnQ and $-2*\varrho*lnQ$ and displays them (**Display**).
- **NB**: $-lnQ/32$ and $-2*\varrho*lnQ/32$ are actually displayed.
- Select a no-change area (the forest) and plot the histogram for $-2*\varrho*lnQ$ (**NCD**).
- Determines a threshold from the no-change distribution (**Threshold**).
- Applies the threshold to $-2*\varrho*lnQ$ and displays the result.