

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)
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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)
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IMAGES

- Two different sections for the unspeckel 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! ☹️
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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`
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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`)
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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.