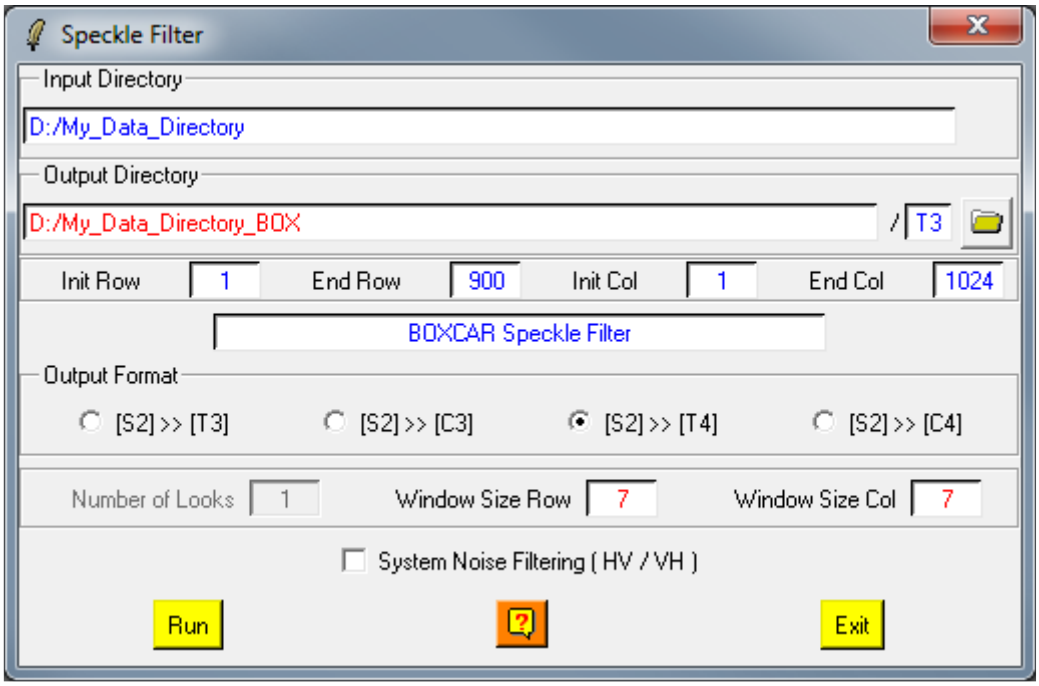
Speckle Filter



Description:

This function is used to apply a Polarimetric Speckle filtering on polarimetric raw binary data.
The different proposed polarimetric Speckle Filetrs are :

- Box Car filter
- Gauss filter
- IDAN filter
- Refined Lee filter.
- PWF (Polarimetric Whitening Filter)

According to the input data format, indicated in the widget, different compatible output data formats are proposed according the following table:

Input Data Format	Output Data Format
(2x2) Sinclair matrix [S2]	[T3], [T4], [C3], [C4]
(3x3) Coherency matrix [T3]	[T3]
(4x4) Coherency matrix [T4]	[T4]
(2x2) Covariance matrix [C2]	[C2]
(3x3) Covariance matrix [C3]	[C3]
(4x4) Covariance matrix [C4]	[C4]
Dual Polarimetric Elements (Sxx, Sxy)	[C2]
Intensities (Ixx, Ixy)	(Ixx, Ixy)

Comments:

Parameters written in Red can be modified directly by the user from the keyboard.

Input/Output Arguments:

Input Directory	Indicates the location of the considered **Main Directory (MD)** containing the polarimetric data sets to be filtered.
Output Directory	Indicates the location of the filtered data output directory. The default value is set automatically to : **Main Directory_XXX / YY**. where **XXX** is associated with the selected Speckle Filter (BOX, GSS, IDAN LEE) and where **YY** is associated with the Output Data Format (**C2, C3**, **C4, T3** or **T4**).

Output Image Number of Rows/Columns:

The output image numbers of rows and columns are initialised to the input data set dimensions.
Users wishing to process a sub-part of the initial image can modify the **Init** and **End** values of the converted images rows and columns.
Note: init and end values have to remain within the range defined by the input image dimensions.

Filtering Parameters:

Window size	Users have to set the size of the (N*N) sliding window used to compute the local estimate of the average matrix. The default value of N is set to **7**.
Number of Looks	Users have to set the Input data equivalent number of looks used to compute the a priori input speckle noise variance. The default value of N is set to **1**.

Note : The IDAN (Intensity Driven Adaptive Neighbourhood) speckle filter functionality is a contribution by G. Vasile and E. Trouve from LISTIC – Polytech'Savoie.