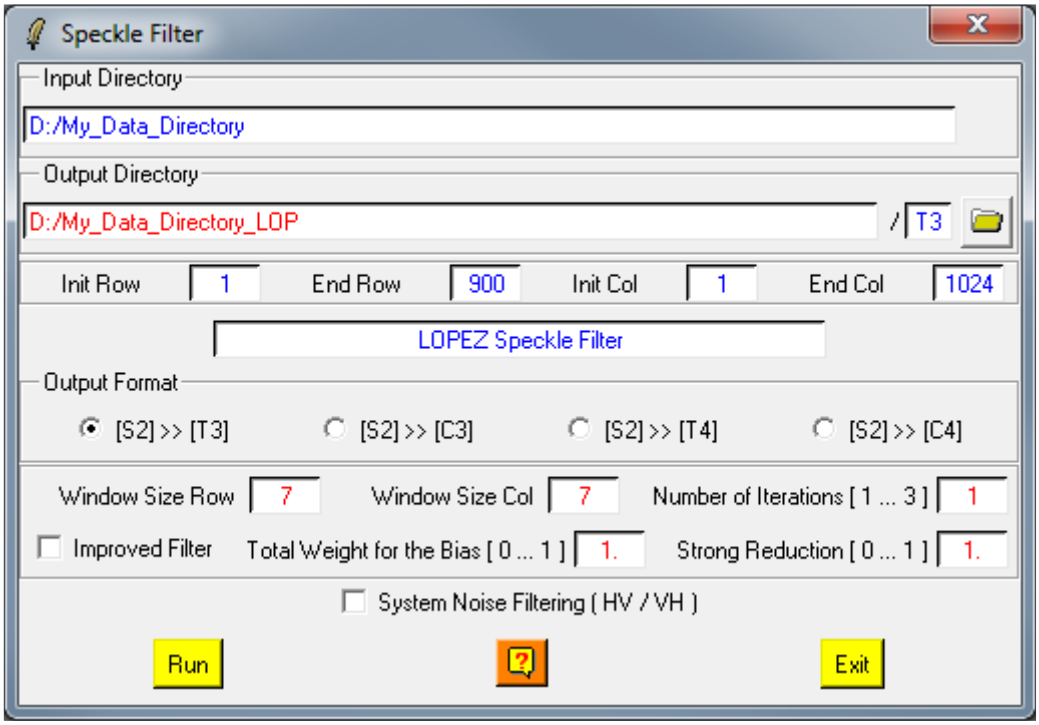
C. Lopez Speckle Filter



Description:

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

- Carlos Lopez 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]

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_LOP / YY**. 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:

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**.
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 Iteration	The number of iterations reaches a maximum value. (The default value is set automatically to 1)
Improved Filter	If selected, the different polarimetric correlation coefficients are estimated according to the C. Lopez model. Otherwise, the ifferent polarimetric correlation coefficients are estimated from a multi-look
Total Weight for the Bias	Parameter used to define the weight for the Bias correction. (The default value is set automatically to 1.0)
Strong reduction	Parameter used to define the noise reduction. (The default value is set automatically to 1.0)

Note : The C. Lopez speckle filter functionality is a contribution by Carlos Lopez Martinez from UPC Barcelona - Spain.