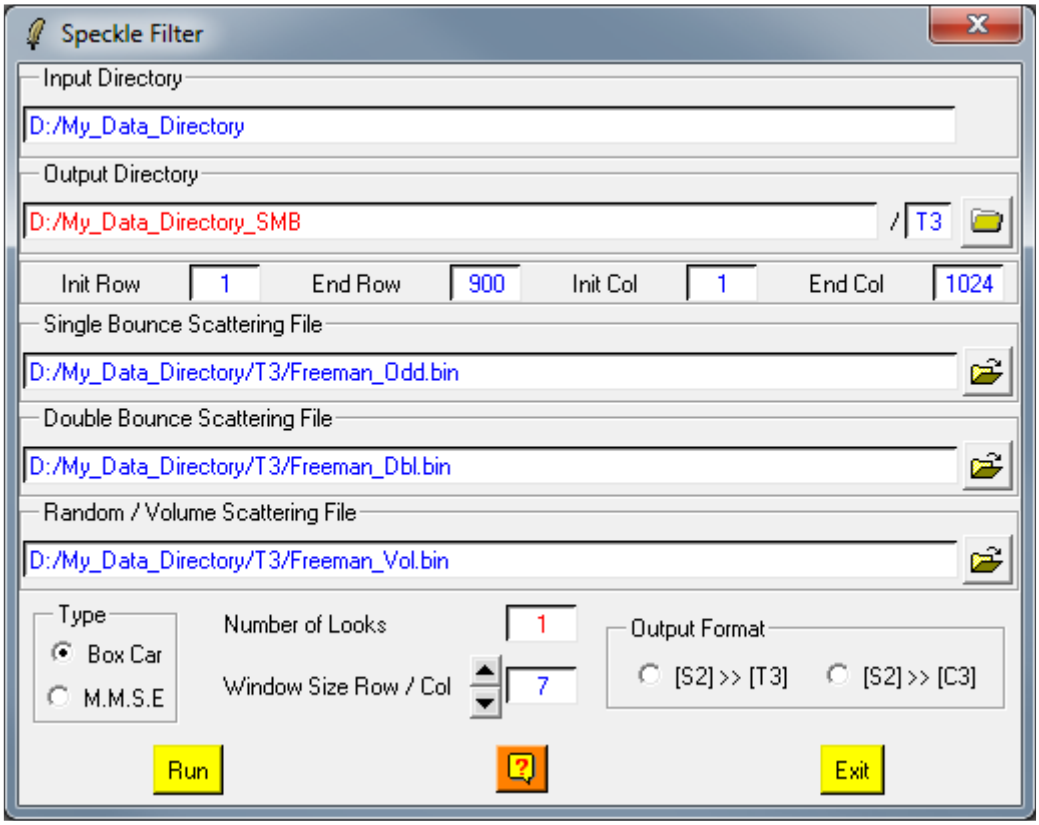
Scattering Model Based Speckle Filter



Description:

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

The proposed polarimetric Speckle Filetr is :

- Scattering Model Based specklefilter.

The different canonical scattering mechanisms (odd bounce, double bounce, volume scattering) are determined by using a polarimetric model based decomposition.

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]
(3x3) Covariance matrix [C3]	[C3]

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_SMB / YY**. where where **YY** is associated with the Output Data Format (**C3** or **T3**).

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**.
Type	This function filters polarimetric complex raw binary data sets using either the Box Car (box) or by minimizing a least square constraint (M.M.S.E)

Reference : .Scattering Model based speckle filtering of polarimetric SAR data. J.S. Lee, D.L. Schuler, M.R. Grunes, E. Pottier, L. Ferro-Famil, IEEE TGRS 44(1),January 2006