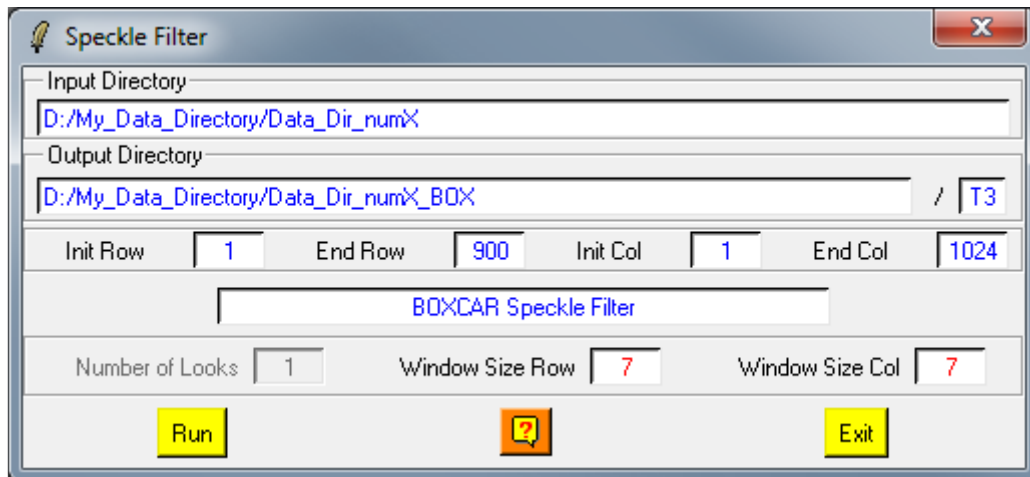


Speckle Filter



The screenshot shows a software window titled "Speckle Filter". It contains the following fields and controls:

- Input Directory:** A text box containing "D:/My_Data_Directory/Data_Dir_numX".
- Output Directory:** A text box containing "D:/My_Data_Directory/Data_Dir_numX_BOX" followed by a dropdown menu set to "T3".
- Init Row:** A text box containing "1".
- End Row:** A text box containing "900".
- Init Col:** A text box containing "1".
- End Col:** A text box containing "1024".
- Filter Type:** A dropdown menu set to "BOXCAR Speckle Filter".
- Number of Looks:** A text box containing "1".
- Window Size Row:** A text box containing "7".
- Window Size Col:** A text box containing "7".
- Buttons:** "Run" (yellow), a help icon (orange square with a question mark), and "Exit" (yellow).

Description:

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

The different proposed polarimetric Speckle Filters are :

- Box Car filter
- Gauss filter
- IDAN filter
- Refined Lee 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]
(3x3) Coherency matrix [T3]	[T3]
Dual Polarimetric Elements (Sxx, Sxy)	[C2]
(2x2) Covariance matrix [C2]	[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_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 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 .

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