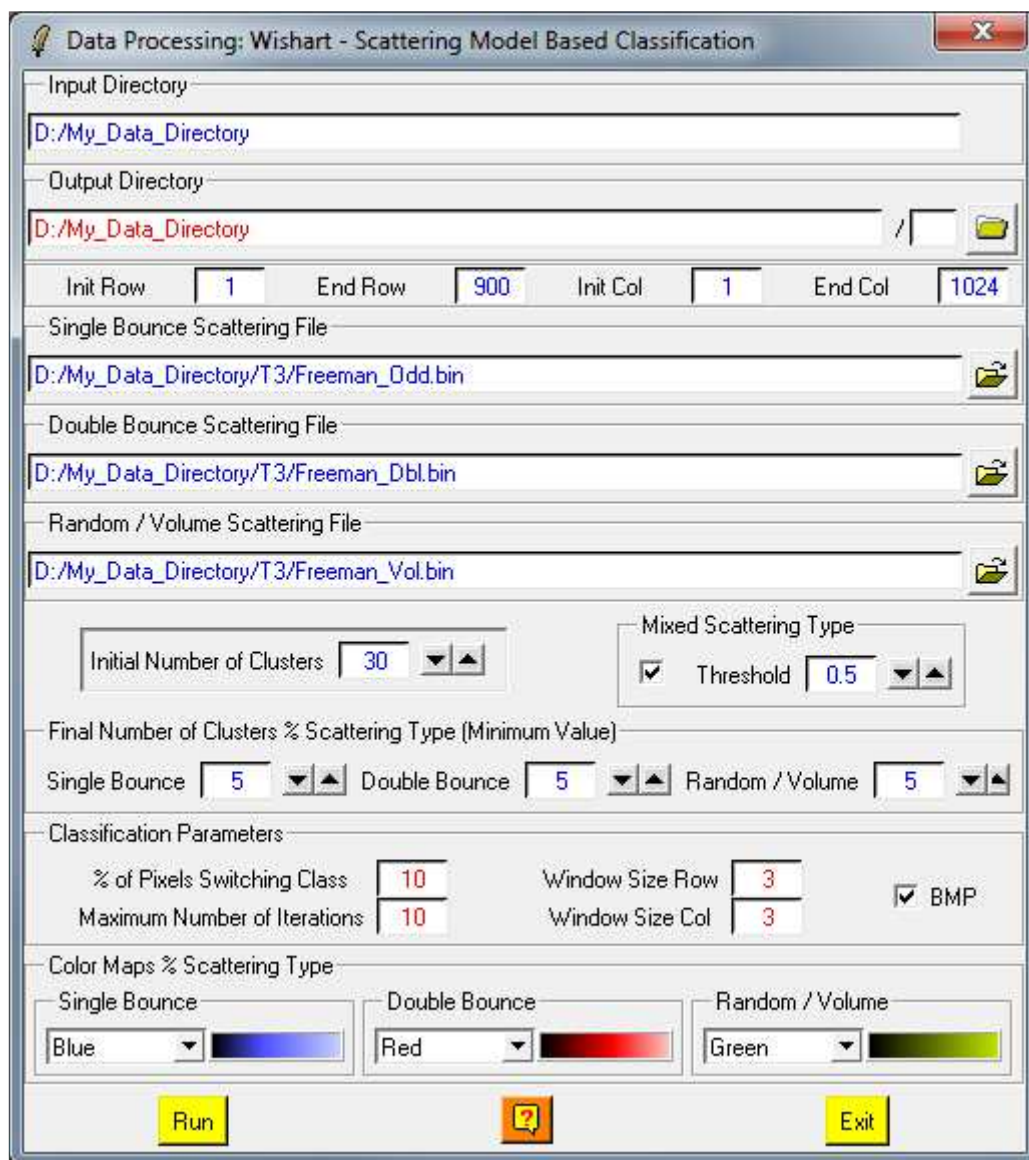


Wishart Scattering Model Based Classification



The screenshot shows a software window titled "Data Processing: Wishart - Scattering Model Based Classification". The interface includes several input fields and controls:

- Input Directory:** D:/My_Data_Directory
- Output Directory:** D:/My_Data_Directory
- Init Row:** 1, **End Row:** 900, **Init Col:** 1, **End Col:** 1024
- Single Bounce Scattering File:** D:/My_Data_Directory/T3/Freeman_Odd.bin
- Double Bounce Scattering File:** D:/My_Data_Directory/T3/Freeman_Dbl.bin
- Random / Volume Scattering File:** D:/My_Data_Directory/T3/Freeman_Vol.bin
- Initial Number of Clusters:** 30
- Mixed Scattering Type:** ☒ Threshold: 0.5
- Final Number of Clusters % Scattering Type (Minimum Value):**
 - Single Bounce: 5
 - Double Bounce: 5
 - Random / Volume: 5
- Classification Parameters:**
 - % of Pixels Switching Class: 10
 - Maximum Number of Iterations: 10
 - Window Size Row: 3
 - Window Size Col: 3
 - ☒ BMP
- Color Maps % Scattering Type:**
 - Single Bounce: Blue
 - Double Bounce: Red
 - Random / Volume: Green

At the bottom, there are three buttons: "Run", a help icon (question mark), and "Exit".

Description:

This program creates binary and bitmap image files resulting from the segmentation of polarimetric data using the Wishart polarimetric classification scheme which performs a Maximum Likelihood (ML) statistical segmentation independently over the three canonical scattering mechanisms (odd bounce, double bounce, volume scattering) which are determined by using a polarimetric model based decomposition

Comments:

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

Input/Output Arguments:

Input Directory	Indicates the complete location of the considered Main Directory (MD) containing the matrix data to be classified.
Output Directory	Indicates the location of the processed data output directory. The default value is set automatically to Main Directory (MD) .

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.

Clustering Configuration:

Final number of clusters	Users have to set the minimum number of clusters for each canonical scattering mechanism
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Classification Configuration:

Window Size	Data to be decomposed may be processed through an additional filtering procedure consisting of a boxcar filter. Users have then to set the size of the (NxN) sliding window used to compute the local estimate of the average matrix. Users wishing to avoid additional filtering may set N to 1.
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The segmentation termination criterion consists of a logical combination of the two following conditions. The iterative k-mean clustering procedure is stopped if :

% of Pixels Switching Class	A sufficiently low percentage of pixels switch class from one iteration to the other. (The default value is set automatically to 10%)
Maximum Number of Iterations	The number of iterations reaches a maximum value. (The default value is set automatically to 10)

ColorMaps:

The colour coding of the bitmap output files is realized by the way of 3 colormaps associated to each canonical scattering mechanisms.
