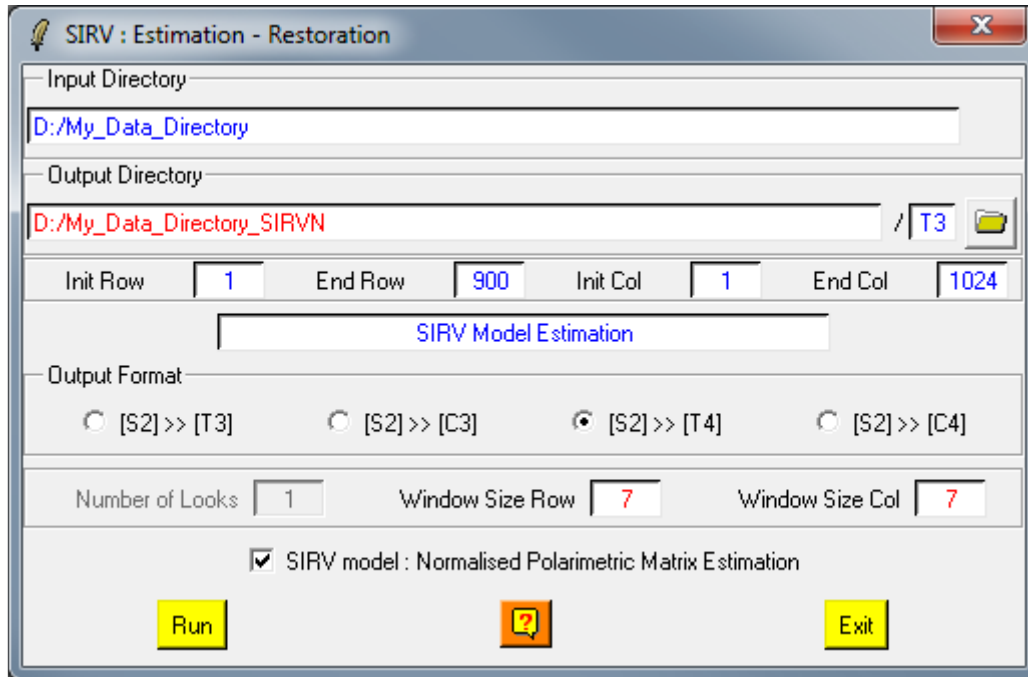


## SIRV Estimation Restoration



The screenshot shows the 'SIRV : Estimation - Restoration' window. It contains the following fields and controls:

- Input Directory:** A text box containing 'D:/My\_Data\_Directory'.
- Output Directory:** A text box containing 'D:/My\_Data\_Directory\_SIRVN' followed by a folder icon and a dropdown menu showing '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'.
- SIRV Model Estimation:** A text box containing 'SIRV Model Estimation'.
- Output Format:** Four radio buttons: '[S2] >> [T3]', '[S2] >> [C3]', '[S2] >> [T4]' (selected), and '[S2] >> [C4]'.
- Number of Looks:** A text box containing '1'.
- Window Size Row:** A text box containing '7'.
- Window Size Col:** A text box containing '7'.
- SIRV model : Normalised Polarimetric Matrix Estimation:** A checked checkbox.
- Buttons:** 'Run' (yellow), a help icon (orange square with a question mark), and 'Exit' (yellow).

### Description:

This function presents an application of spherically invariant random vector (SIRV) modeling for coherency matrix estimation in heterogeneous clutter. The complete description of the polarimetric data set is achieved by estimating the span and the normalized coherency independently. The normalized coherency describes the polarimetric diversity, while the span indicates the total received power. The main advantages of the proposed fixed-point (FP) estimator are that it does not require any *a priori* information about the probability density function of the texture (or span) and that it can directly be applied on adaptive neighborhoods. Interesting results are obtained when coupling this FP estimator with an adaptive spatial support based on the scalar span information.

This Application can only be applied on (2x2) Sinclair matrix ([S2]) raw binary data format.

## Comments:

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

## Input/Output Arguments:

<b>Input Directory</b>	Indicates the location of the considered <b>Main Directory (MD)</b> containing the polarimetric data sets to be filtered.
<b>Output Directory</b>	Indicates the location of the filtered data output directory. The default value is set automatically to : <b>Main Directory_SIRV / YY</b> , where <b>YY</b> is associated with the Output Data Format ( <b>C3</b> , <b>C4</b> , <b>T3</b> or <b>T4</b> ).

## 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:

<b>Window size</b>	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 <b>7</b> .
<b>Number of Looks</b>	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 <b>1</b> .

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