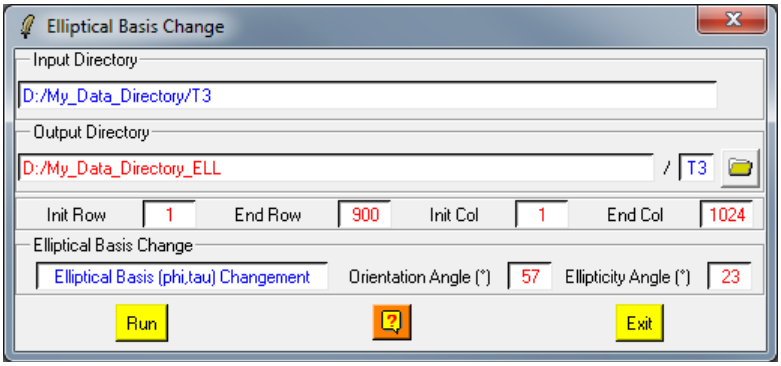
Elliptical Basis Change



Description:

This function offers the possibility to transform polarimetric data sets represented in a polarization basis to polarimetric data sets represented in an user defined basis.
The change of basis is performed by the way of Special Unitary operators from SU(2) or SU(3) groups.

This functionality is only available for :

- **[S2]** : 2x2 complex Scattering Matrix raw binary data (monostatic case).
- **[T3]** : 3x3 complex Coherency Matrix raw binary data.
- **[C3]** : 3x3 complex Covariance Matrix raw binary data.

Important Note: This program assumes that the input polarimetric matrices are defined in the **(H,V)** basis. Users wishing to transform data sets defined in another polarization have to take this fact into account.

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** containing the polarimetric data sets.
Output Directory	Indicates the location of the data output directory. The default value is set automatically to : • **Main Directory_LIN** if the Linear +45°/-45° basis change is selected. • **Main Directory_CIR** if the Circular basis change is selected. • **Main Directory_ELL** if the Elliptical basis change is selected.

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.

Processing Parameters:

If Elliptical Basis Change is selected, the geometrical parameters defining the basis change have to be provided.

Orientation Angle
Users have to set the value of the ellipse orientation angle of the new elliptical polarisation basis.
This angle belongs to the range [-90°, +90°].
Note: The orientation angle is automatically fixed to +45° in the Linear Basis Change case and to 0° in the Circular Basis Change case.

Ellipticity Angle
Users have to set the value of the ellipse ellipticity angle of the new elliptical polarisation basis.
This angle belongs to the range [-45°, +45°].
Note: The ellipticity angle is automatically fixed to 0° in the Linear Basis Change case and to +45° in the Circular Basis Change case.