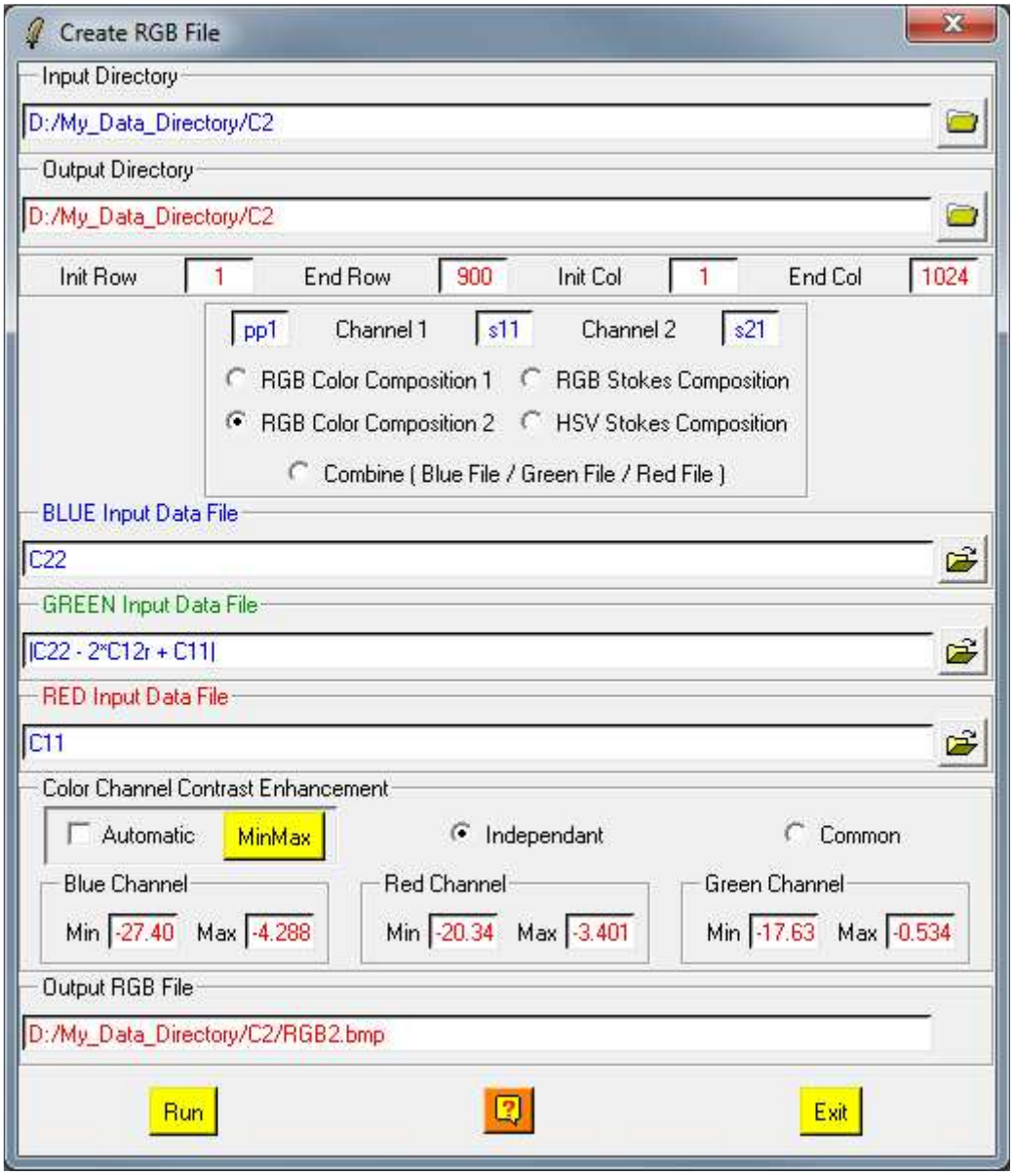
Create RGB File – Partial Polarimetry



Description:

This program creates color coded bitmap image files from different polarimetric binary data files.

The color coding is realised by assigning input files to the Red Green Blue channels of a 24 bit colormap.

This functionality is only available for :

- **(Sxx, Sxy)** : Dual polarimetric complex Scattering Elements raw binary data

- **(Ixx, Ixy)** : Dual polarimetric real Intensity Elements raw binary data.
- **[C2]** : 2x2 complex Covariance Matrix raw binary data.

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 **MainDirectory** containing the datasets to be imaged.

Output Directory Indicates the location of the processed bitmap image output directory.
The default value is set automatically to the **MainDirectory**.

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.

Color Composition:

Color coding according to the different proposed compositions may be selected by ticking optional fields. In this case, input files do not have to be specified.

RGB Color Composition 1
Blue = C11 Green = C11 +2 Re(C12) + C22 Red=C22
RGB Color Composition 2
Blue = C22 Green = C11 +2 Re(C12) + C22 Red=C11
RGB Stokes Composition
Blue = g1/g0 Green = g3 / g0 Red=g2 / g0
HSV Stokes Composition
Hue = arctg(g2 / g1) Sat = sqrt(g1^2 + g2^2) Val=0.5*(1 – g3)

Where g0, g1, g2 and g3 are the Stokes components and gi are the normalized Stokes components with gi = gi / g0

Input/Output Files:

Input File Designates, for each color channel, the real data binary file to be imaged.
Note: Input File must not be complex type.

Output File Indicates the name of the bitmap output file
The default Output file names are set automatically to :
MainDirectory / RGB1.bmp
Or
MainDirectory / RGB2.bmp.

Or
MainDirectory / StokesRGB.bmp
Or
MainDirectory / StokesHSV.bmp
Or
MainDirectory / CombineRGB.bmp

Color Channel Contrast Enhancement

Scales the output data range of variation

- Automatic : The first colormap index is assigned to values inferior or equal to min, while the last colormap index is assigned to values superior or equal to max.
  If selected, the program automatically search the min and max values of the data, otherwise min and max values are fixed by the user.
- Enhanced Contrast : The program automatically adapts the color scale (colorbar) to data distribution. Min and max are set so that 5% of the total number of pixels are superior to max and 5% are inferior to min.

Note : The Min and Max values can be set independantly for each color channel or can be set in common for the three color channels. In such a case the Min value is equal to the minimum of the three Min values and the Max value is equal to the maximum of the three Max values.