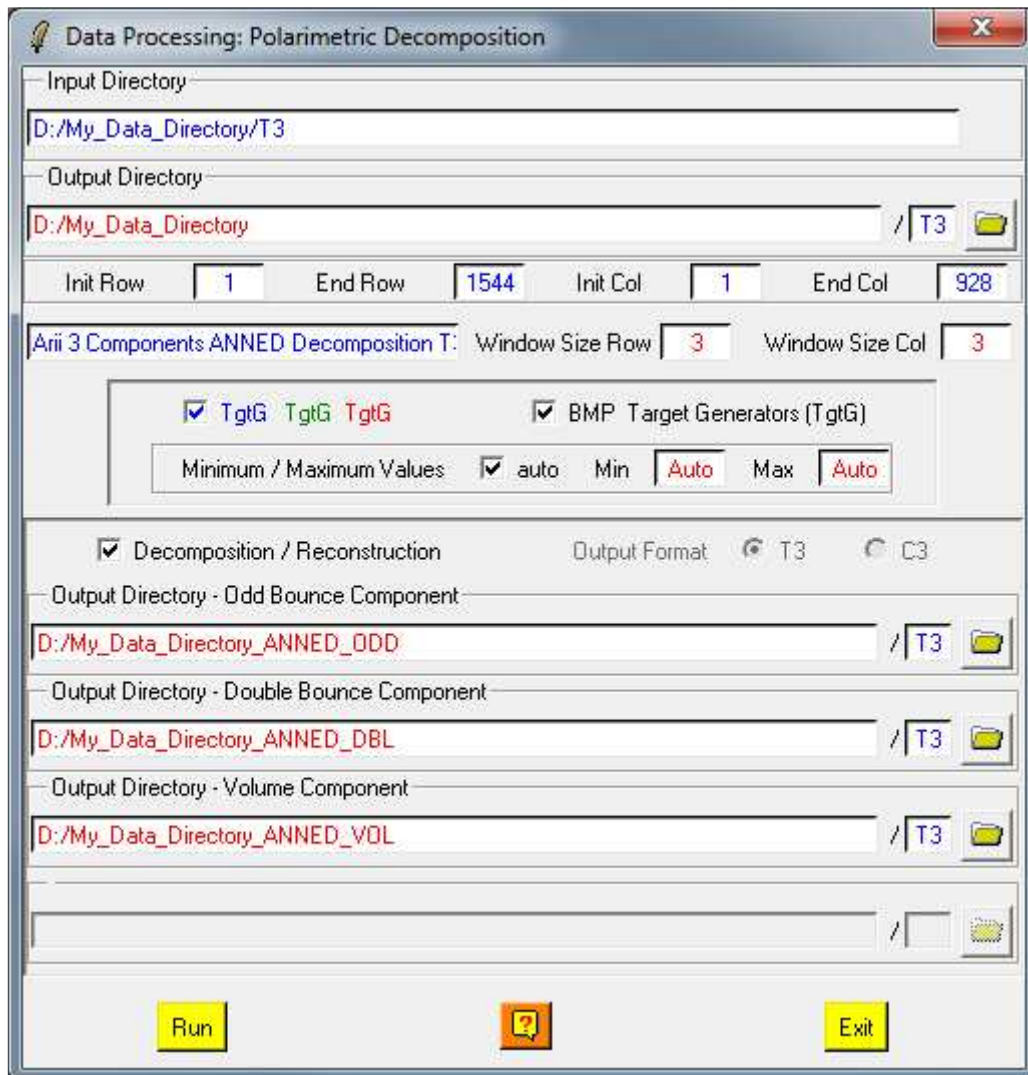


Polarimetric Decomposition



Data Processing: Polarimetric Decomposition

Input Directory:

Output Directory: /

Init Row: End Row: Init Col: End Col:

Arii 3 Components ANNED Decomposition T: Window Size Row: Window Size Col:

☒ TgtG TgtG TgtG ☒ BMP Target Generators (TgtG)

Minimum / Maximum Values ☒ auto Min: Max:

☒ Decomposition / Reconstruction Output Format: ☒ T3 ☐ C3

Output Directory - Odd Bounce Component: /

Output Directory - Double Bounce Component: /

Output Directory - Volume Component: /

Description:

This function offers the possibility to apply one of the well-known Polarimetric Target Decomposition Theorems on polarimetric data set.

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.
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Output Directory

Indicates the location of the data output directory.
The default value, according the Polarimetric Decomposition selected, is set automatically to :

- **Main Directory_JRH / X3** (Huynen)
- **Main Directory_RMB1 / X3** (Barnes-1)
- **Main Directory_RMB2 / X3** (Barnes-2)
- **Main Directory_SRC / X3** (Cloude)
- **Main Directory_WAH1 / X3** (Holm-1)
- **Main Directory_WAH2 / X3** (Holm-2)
- **Main Directory_HAA / X3** (Entropy/Anisotropy/Alpha)
- **Main Directory_NNED / X3** (Arii NNED)
- **Main Directory_ANNED / X3** (Arii ANNED)

etc ...

Note : In the case of the Freeman, VanZyl, Yamagushi, Krogager and TSVM-Touzi decompositions, the default value of the data output directory is set to **Main Directory / X3**

where **X3** stands for **T3** or **C3** according to the data output format 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:

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 (N*N) sliding window used to compute the local estimate of the average matrix.

The default value of N is set to **0**. Users wishing to avoid additional filtering may set N to **1**.

Output Format T3 C3 As incoherent averaging will be introduced during the different polarimetric decompositions, user may select the data output format that can be either (3x3) complex Coherency [**T3**] matrix format or (3x3) complex Covariance [**C3**] matrix format.

Decomposition The corresponding output files are :

Freeman 2 Components Decomposition

- MD / Freeman2_Ground.bin
- MD / Freeman2_Vol.bin

Freeman 3 Components Decomposition

- MD / Freeman_Odd.bin
- MD / Freeman_Dbl.bin

- MD / Freeman_Vol.bin

VanZyl 3 Components Decomposition

- MD / VanZyl3_Odd.bin
- MD / VanZyl3_Dbl.bin
- MD / VanZyl3_Vol.bin

Yamaguchi 3 Components Decomposition

- MD / Yamaguchi3_Odd.bin
- MD / Yamaguchi3_Dbl.bin
- MD / Yamaguchi3_Vol.bin

Yamaguchi 4 Components Decomposition

- MD / Yamaguchi4_Odd.bin
- MD / Yamaguchi4_Dbl.bin
- MD / Yamaguchi4_Vol.bin
- MD / Yamaguchi4_Hlx.bin

Krogager Decomposition

- MD / Krogager_Ks.bin
- MD / Krogager_Kd.bin
- MD / Krogager_Kv.bin

TSVM - Touzi Decomposition

- MD / TSVM_psi.bin
- MD / TSVM_psi1.bin
- MD / TSVM_psi2.bin
- MD / TSVM_psi3.bin
- MD / TSVM_phi_s.bin
- MD / TSVM_phi_s1.bin
- MD / TSVM_phi_s2.bin
- MD / TSVM_phi_s3.bin
- MD / TSVM_alpha_s.bin
- MD / TSVM_alpha_s1.bin
- MD / TSVM_alpha_s2.bin
- MD / TSVM_alpha_s3.bin
- MD / TSVM_tau_m.bin
- MD / TSVM_tau_m1.bin
- MD / TSVM_tau_m2.bin
- MD / TSVM_tau_m3.bin

TgtG TgtG TgtG If selected, a 24-bit colour BMP image (Windows Bitmap format) containing contrasted red, green and blue channels assigned to the 3 Huynen Target Generators (TgtG) after decomposition, is created.

BMP TgtG If selected, a 8-bit dynamic range (Windows Bitmap format) image file of the 3 Huynen Target Generators (TgG) after decomposition, is created.

Min / Max Values

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.
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