- ☑ *Save algorithm files* 🟡 🟢 : if checked, the *Algorithm raster* (page 142) is saved, in addition to the classification raster, in the same directory as the *Classification output*; a raster for each spectral signature used as input (with the suffix `_sig_MC ID_C ID`) and a general algorithm raster (with the suffix `_alg_raster`) are created;

- *BATCH* 🔵 : add this function to the *Batch* (page 102);

- *RUN* ➤ : choose the output destination and start the image classification;

Clustering

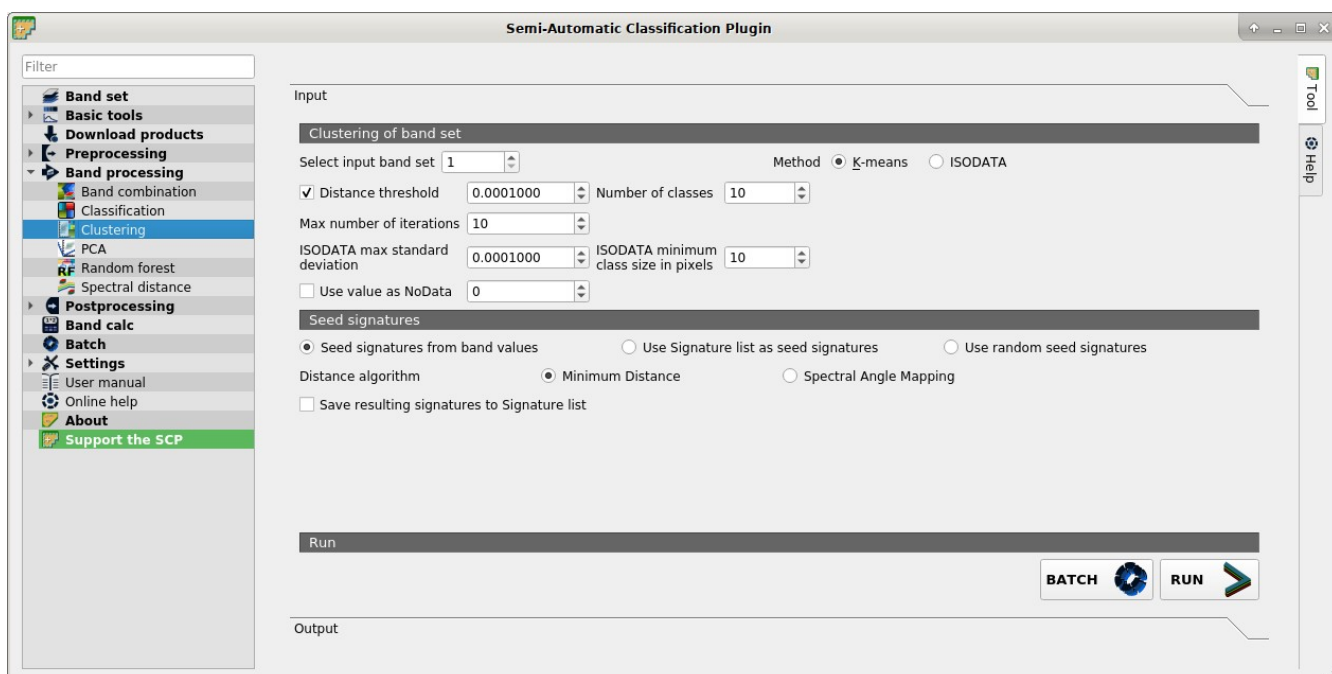- *Clustering of band set* (page 75)

- *Seed signatures* (page 76)

Fig. 39: Clustering

This tab allows for the *Clustering* (page 148) of a *Band set* (page 31). In particular, *K-means* (page 148) and *ISODATA* (page 148) methods are available.

A report .txt is saved along with the classification, containing the class spectral signature and the spectral distance thereof.

Clustering of band set

- *Select input band set* 1⌄ : select the input *Band set* (page 31);

- *Method* ⦿ *K-means* ⦿ *ISODATA*: select the clustering method *K-means* (page 148) or *ISODATA* (page 148);

- ☑ *Distance threshold* `1◇`: if checked, for K-means: iteration is terminated if distance is lower than threshold; for ISODATA: signatures are merged if distance is greater than threshold;

- *Number of classes* `1◇`: number of desired output classes;

- *Max number of iterations* `1◇`: maximum number of iterations if *Distance threshold* is not reached;

- *ISODATA max standard deviation* `1◇`: maximum standard deviation considered for splitting a class, for *ISODATA* algorithm only;

- *ISODATA minimum class size in pixels* `1◇`: desired minimum class size in pixels, for *ISODATA* algorithm only;

- ☑ *Use value as NoData* `1◇`: if checked, set the value of `NoData` pixels, ignored during the calculation;

Seed signatures

- ⦿ *Seed signatures from band values* ⦿ *Use Signature list as seed signatures* ⦿ *Use random seed signatures*: select one options for seed signatures that start the iteration; the option *Seed signatures from band values* divides the spectral space of the *Band set* (page 31) to get spectral signatures; the option *Use Signature list as seed signatures* uses the spectral signatures checked in *ROI & Signature list* (page 24); the option *Use random seed signatures* randomly selects the spectral signatures of pixels in the *Band set* (page 31);

- *Distance algorithm* ⦿ *Minimum Distance* ⦿ *Spectral Angle Mapping*: select *Minimum Distance* (page 137) or * *Spectral Angle Mapping* (page 139) for spectral distance calculation;

- ☑ *Save resulting signatures to Signature list*: if checked, save the resulting spectral signatures in the *ROI & Signature list* (page 24);

- *BATCH* 🌀 : add this function to the *Batch* (page 102);

- *RUN* ➤ : choose the output destination and start the calculation;

PCA

> - *Principal Component Analysis of Band set* (page 76)

This tab allows for the PCA (*Principal Component Analysis* (page 146)) of bands loaded in the *Band set*.

A report .txt is saved along with the PCA bands, containing the covariance matrix, correlation matrix, eigen vectors, and eigen values.

Principal Component Analysis of Band set

- *Select input band set* `1◇`: select the input *Band set* (page 31);

- ☑ *Number of components* `1◇`: if checked, set the number of calculated components; if unchecked, all the components are calculated;