Process Description:

This process attempts to detect valid speckles in each frame of the movie. After the image is filtered using a Gaussian kernel, local maxima are detected and weak local maxima are removed using a statistical test based on the local noise estimation.

Parameter Descriptions:

Input Channels:

This allows you to select which channels you want to perform speckle detection on. This should be applied to all channels that are going to be used for calculating the noise parameters. Select the channels by clicking on them in the "Available Input Channels" box and then clicking "Select>" to move them to the "Selected Channels" box. You can unselect a channel by clicking the "Delete" button

Standard deviation for image filtering (pixels):
This value determines the standard deviation of the Gaussian kernel used for filtering the image. Its default value is the theoretical point-spread function standard deviation calculated from the wavelength, pixel size and numerical aperture.

Alpha value for statistical selection of speckles:
This determines the alpha value used for the statistical selection of the speckles.

Detection mask(s):
The masks box lists the channels where masks are available from the previous segmentation processes. One or several masks can be selected and used for speckle detection. If several masks are selected, the union of the process uses the mask union for each frame.

Maximal order of detection:
This determines the maximal order of the speckles to be detected. If greater than one, additional rounds of speckle detection are performed until the maximal order is reached or less speckles are detected than the minimum required fraction (see below).

Minimum fraction of additional speckles
This specifies the minimal fraction of speckles to be found during each hierarchical level of detection after the initial detection.