

## **Process Description:**

Kinetic analysis is performed in two steps. First, speckle birth/death events are classified by comparing their intensity variation relative to the background intensity variation. Using a quantitative criterion, insignificant events are excluded and significant events are associated to the corresponding kinetic events (polymerization/depolymerization). Second, kinetic maps are generated by averaging the individual kinetic events over the designated time window using Gaussian spatial blurring.

## **Parameter Descriptions:**

### **Input Channels:**

This allows you to select which channels you want to perform kinetic analysis 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

### **Bleaching reduction (for expert users):**

This parameter is used to correct for the effect of photobleaching. Its value determines the threshold used to discriminate weak scores due to bleaching from scores related to polymer turnover.

### **Standard deviation for Gaussian low-pass filtering (pixels) :**

This value sets the standard deviation of the Gaussian blurring applied to each significant birth/death event.

### **Number of frames for time averaging:**

This value determines the number of frames over which the birth and death events should be averaged. Note: the number of frames for time averaging must be odd.

## **References**

Ponti, A., P. Vallotton, et al. (2003). "Computational analysis of F-actin turnover in cortical actin meshworks using fluorescent speckle microscopy." Biophys J 84(5): 3336-3352.