

Process Description:

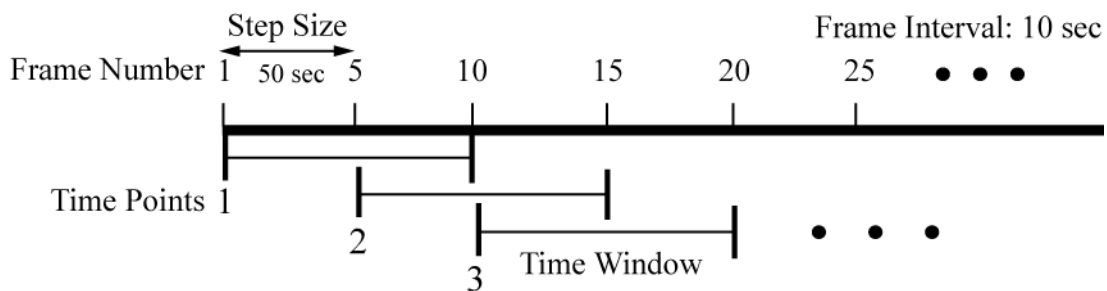
The flow tracking process use multi-frame cross-correlation to calculate the flow velocity at any speckle position. The correlation score of a template consisting of a square box of specified size is integrated of multiple consecutive frame pairs in a time window at each point. The output is a calculated flow velocity representing the average flow velocity within the time window.

Parameter Descriptions:

Input Channels:

This allows you to select which channels you want to perform noise estimation 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

Dynamic parameters



Frame range:

These two values determine the first and the last frame over which the time window can be moved for the calculating the flow velocities.

Time window (frames):

This is the length of the time window used for the calculating the flow velocities.

Time stepsize (frames):

This is the interval used to move time window used for the calculating the flow velocities.

Edge erosion width (pixels):

This value specifies the distance over which the edge will be shifted towards the cellular domain. This shift reduces the potential error of tracking speckles that are close to the edge due to high intensity gradient across the edge. The amount of shift depends on the quality of edge detection

Correlation length range (pixels):

These values specify the minimum and maximum sizes of the template used to calculate correlation scores. If the values are different, the algorithm will automatically adapt the template size required for a stable flow tracking at each point within the specified range.

Minimum feature size (pixels):

This specifies the minimum size of features that can be detected by the flow tracking.

Maximum flow speed (pixels/frame):

This determines the maximum speed that is expected of the flow. It should be high enough so that flow of high speed will not be missed in tracking. However, high values will increase computational tracking time.