

Moving Soundscapes – change analysis

Intro

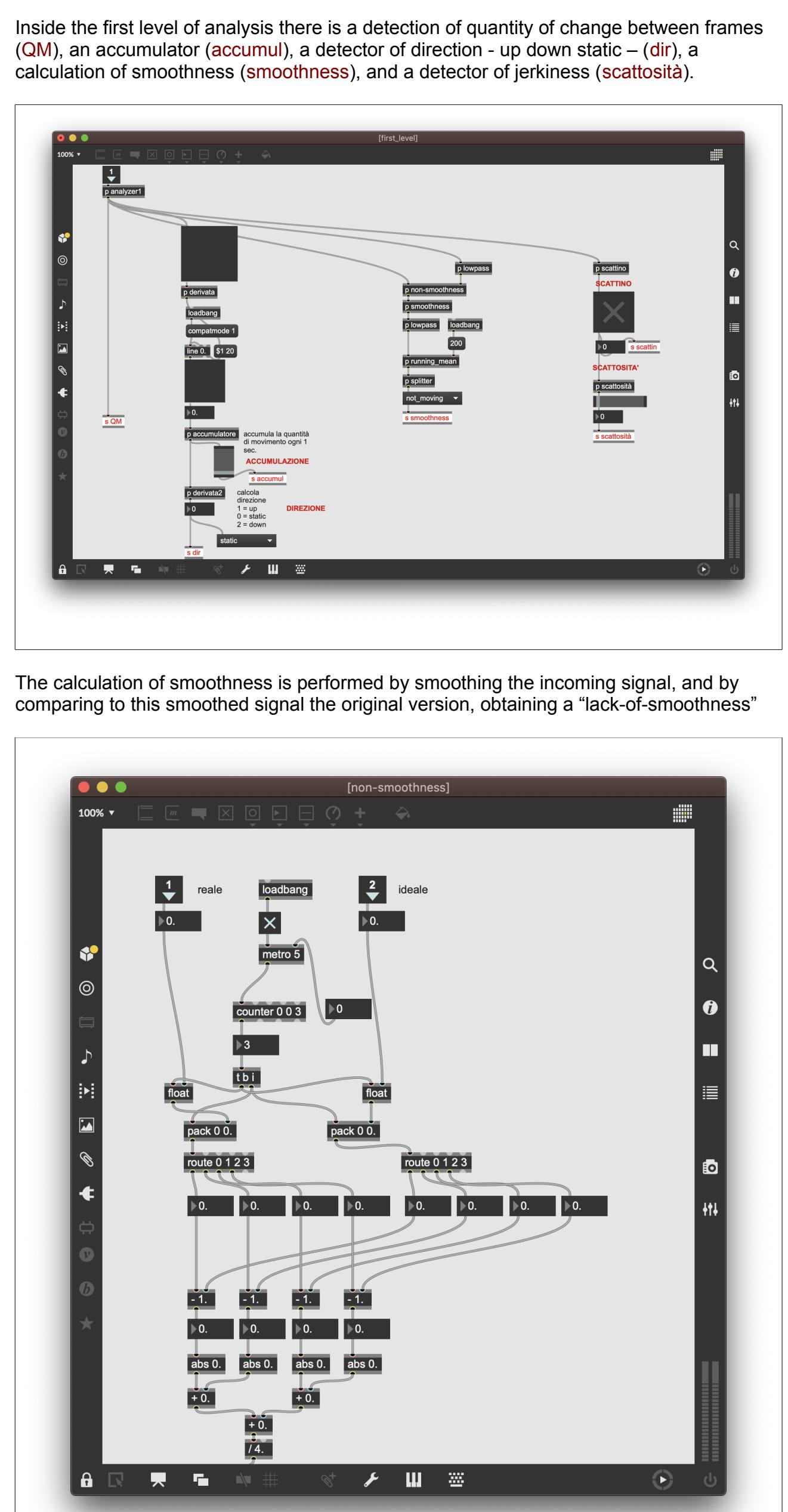
This algorithm represents the central control of the installation Moving Soundscapes, whose behavior can be seen in the following video : <https://youtu.be/Kp8f3Qj1T3s>

Algorithm description

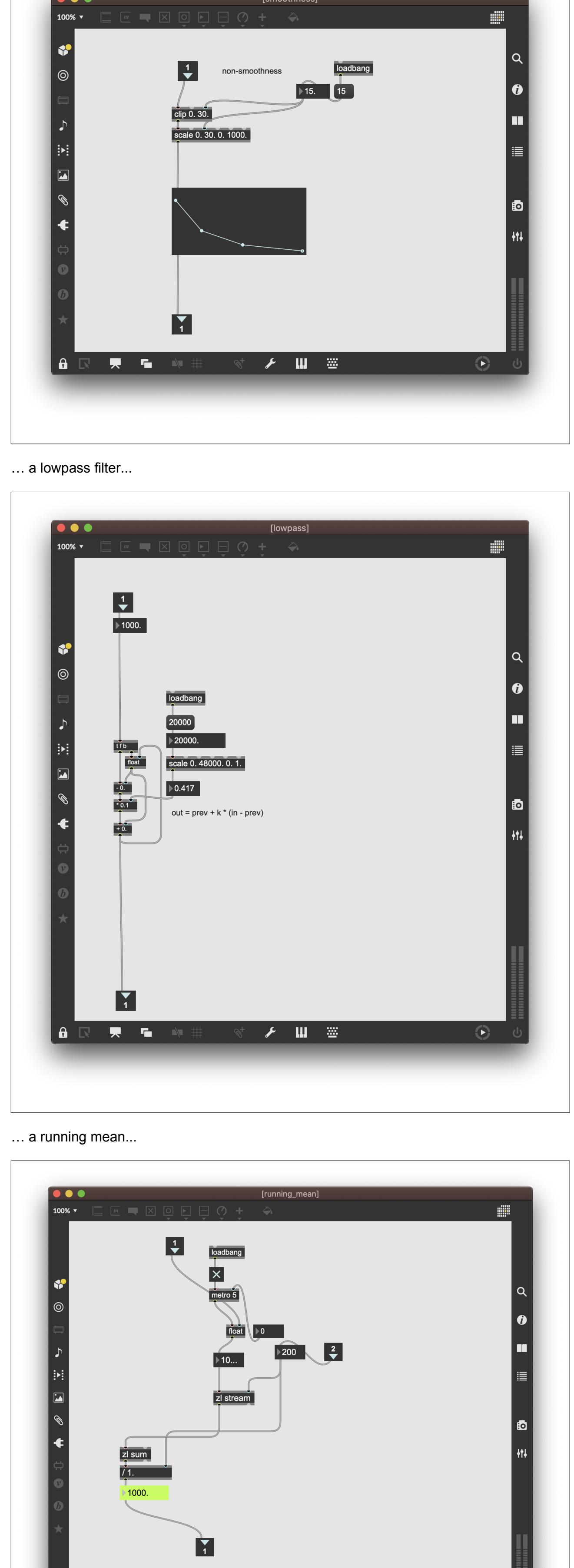
The input can be any meaningful series of data (motion capture, audio analysis, video analysis...) entered as a mono channel of integers between 0 and 127 – inside the algorithm input data are sampled @ 10 ms. rate.
The algorithm analyzes how input changes, and places it in a continuum where at one extremity there is a « non intrusive » label and at the other there is an « intrusive » label.

Details

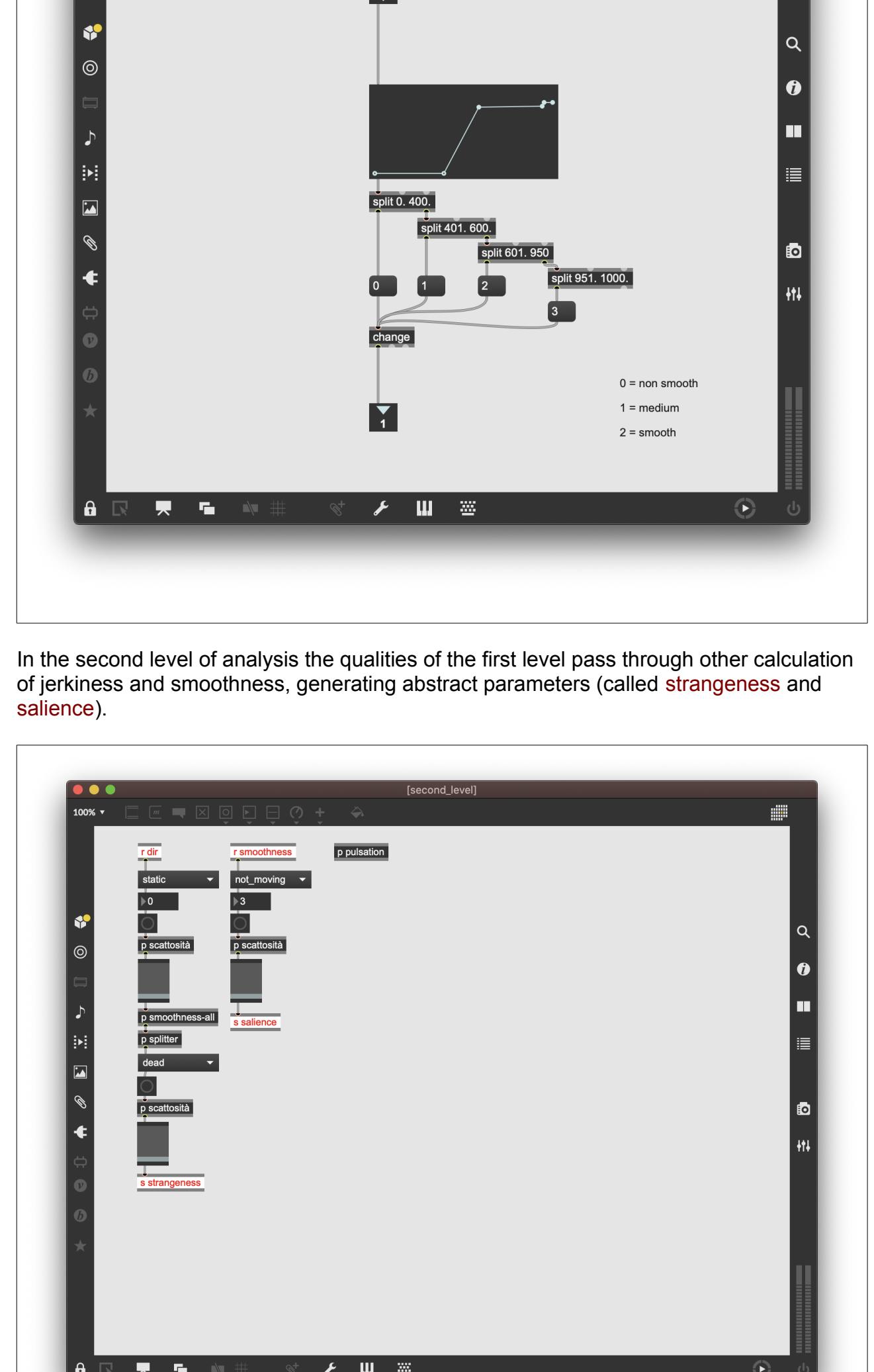
This is the interface of the demo patch : the INPUT slider represents incoming data. The other slider represents the algorithm's output.



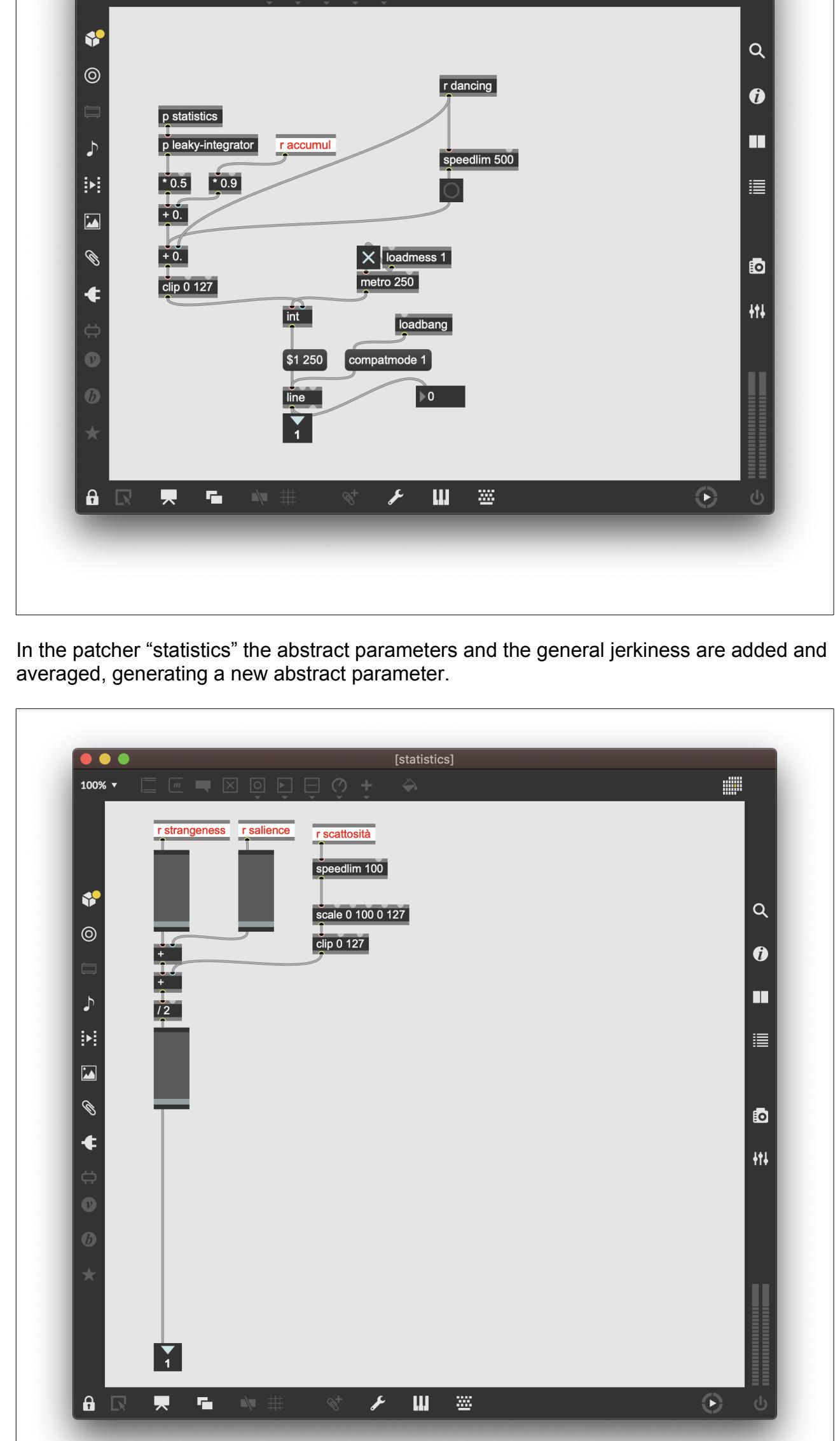
Inside the "algo" patcher there are 3 levels of analysis



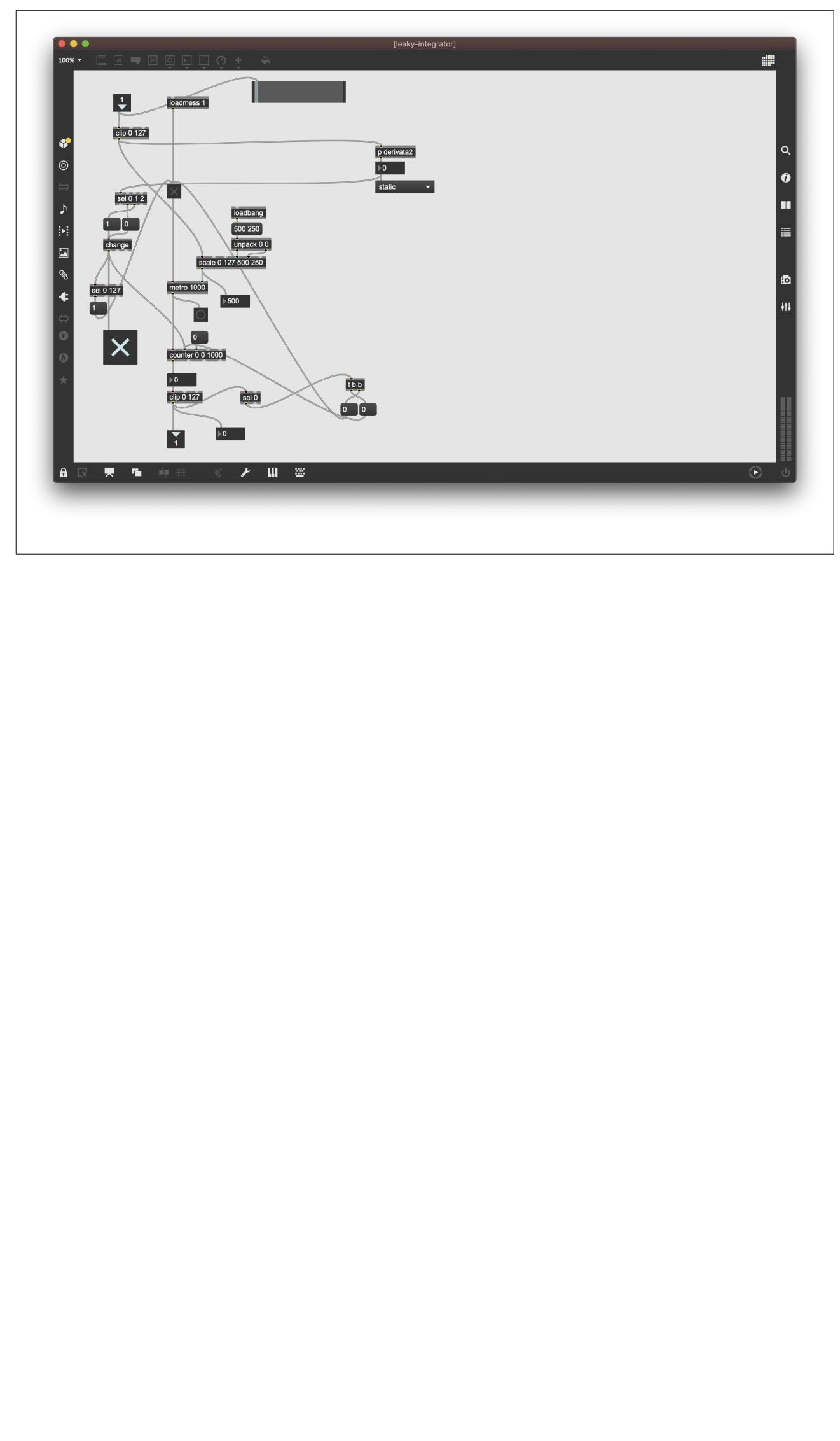
Inside the first level of analysis there is a detection of quantity of change between frames (QM), an accumulator (accumul), a detector of direction - up down static - (dir), a calculation of smoothness (smoothness), and a detector of jerkiness (scattosità).



The calculation of smoothness is performed by smoothing the incoming signal, and by comparing to this smoothed signal the original version, obtaining a "lack-of-smoothness"



... a lowpass filter...



... a running mean...



Finally, the parameter is categorized in 3 qualities : smooth, medium, not smooth.

This new abstract parameter enters a leaky integrator, which tends to slowly bring the output to zero.

