Synchronous Granular Sampler

Sample accurate, 6 voice polyphonic MSP (audio) driven Synchronous Granular Sampler, with many unusual modulation options. The core is based on the legendary Nobuyasu Sakodna's Granular patch from IRCAM.

Features:

Filters

- User can choose between parallel and series circuit
- When filters are modulated by envelope or LFO, "mod. range" sets the frequency interval which corresponds to the envelope or LFO values between 0 to 1 while "Mod. start" sets the initial modulation value.

Example: Mod. range is set to 300 and mod. start to 200. When the envelope or LFO outputs values from 0 to 1, filter's cutoff frequency travels between 200 to 500Hz.
- If "Get duration from ADSR" is on, the length of volume envelope ADSR (A+D+R) sets also the filter envelope time.
- When the "inverse" option is turned on, the envelope's function as a negative modulator.

Windowing

Window defines the shape of the grain. The width of Quasi-Gauss and Triangle/Trapez windows can be changed by numberbox next to the name. The Pulsar window in this implementation does not work as a separate window but as various small windows (each segment between two successive zero crossings represents a window). In the same way works a recording if used as window. It is recommended that these two windows are used with large window sizes or 0 hop size deviation.

Grain Duration

The grain duration can be set by hand. If the random hop size deviation is set to very small or zero amount the duration affects the pitch of the sound (due to convolution of grain's pulse train with the sampled sound).

Grain duration can be as well randomized or controlled by LFO. If using the second option with very small hop size deviation the result is a sort of pitch modulation.

Sample Reading

Sample can be read either with envelope or phasor (saw waveform). Phasor infinitely loops the selected area (loop) while envelope reads it only once (or few times if the envelope has more peaks). The phasor can either freely read the sample while playing notes (free phase triggering) or it can be reset every time when note is pressed (reset phase with key triggering).

Hop Size Deviation

Linear hop size deviation can be either positive or negative. When changing the linear hop size deviation the distance between the grains is equally distributed. When changing the random hop size deviation the distance between grains is random.

Mini Comber

Mini Comber is a mini comb filter for mini sound effects. Since a more interesting comb filter effects can be achieved with granular sampler itself, mini comber can be used for stereo phasing.

Sample position Modulation

This is an extra option for playing the sample. For instance if the sample is being played forward either by envelope or phasor, this option enables us to make small (recommended) extra movements forward and backwards. The randomness can be added to the LFO modulation.

Volume and Pan

If Stereo Width is more than 0 different panning position is set for each individual grain.

Nudge

Sometimes the phasors which represents the grain engine gets out of phase (usually if trying out various very small grain sizes). This results in pulsating/ rhythmical sounds. The nudge button hence resets the phasors phases to default setting.