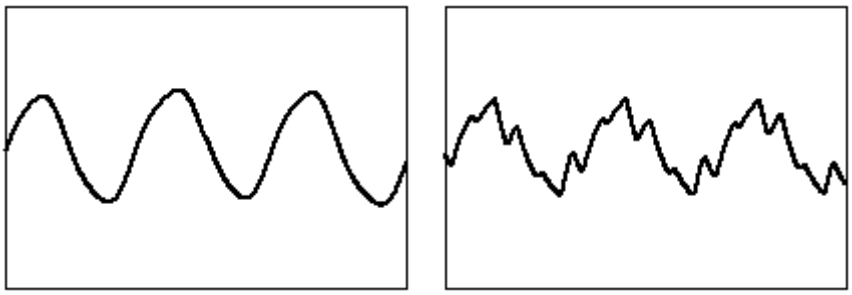
Ringdown



This is a brand new synthesis method!

When two sine waves are ring modulated together, the result is two tones whose frequencies are equal to the sum and difference of the input frequencies.

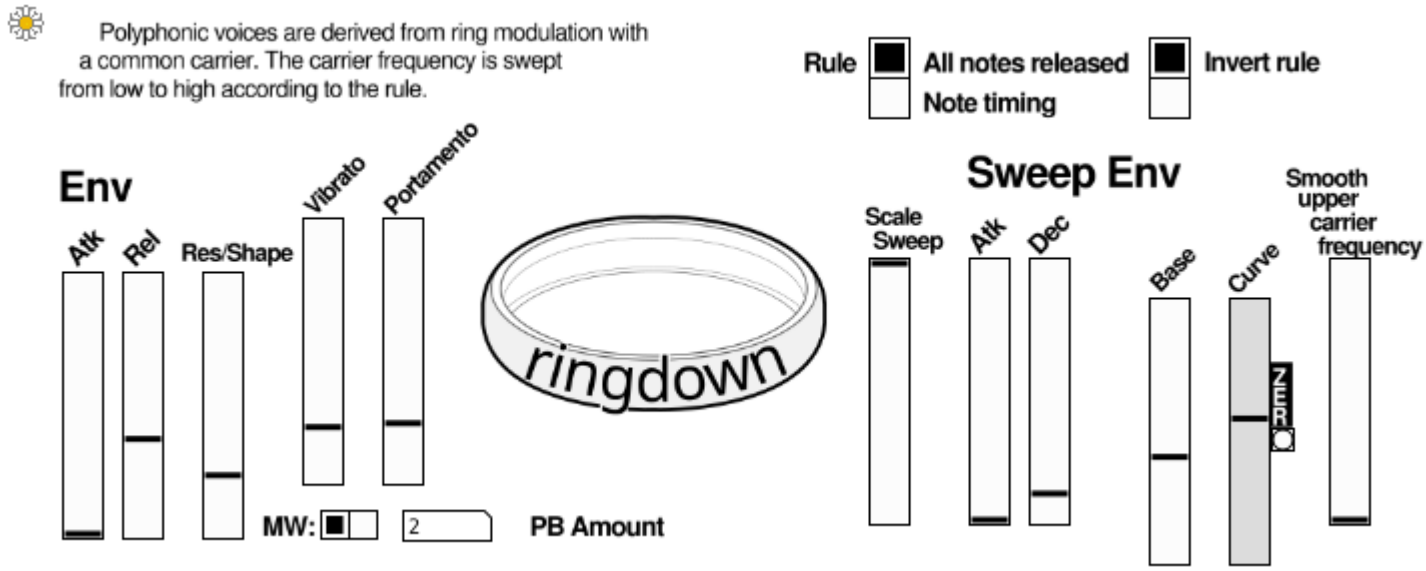
This synth places a carrier oscillator at an arbitrary frequency high above the notes that you play. Each voice is generated by ring modulating this oscillator by a sine wave whose frequency is halfway between the carrier frequency and the intended fundamental. The resulting tone is filtered to dampen frequencies generated above the fundamental.

The artifacts generated while sweeping the frequency of the carrier are amusing and sometimes lovely.

‘Vibrato’ sets the speed of cyclic pitch modulation. ‘MW’ selects between a preset amount of vibrato or allows the mod wheel to set the amount. ‘Portamento’ slews the pitch of newly triggered voices.

‘Rule’ sets the MIDI conditions that cause the carrier to sweep up and down. ‘Invert rule’ swaps the high state and low state. ‘Scale Sweep’ multiplies the frequency of the carrier. Higher values here will result in a carrier of a higher pitch.

The exact frequency of the carrier frequency is influenced by trends in the MIDI input stream. ‘Smooth upper carrier frequency’ slews changes to the carrier frequency.



Env:
‘Atk’ and ‘Rel’ shape the amplitude of the individual voices.‘Res/ Shape’ alters simultaneously the filter resonance of each voice and the shape of the oscillation. This changes the harmonic profile of the voices.

Sweep Env:
‘Atk’ and ‘Dec’ set separate slew times for the carrier to travel to the high state and the low state.

‘Base’ sets the low frequency state of the carrier. ‘Curve’ biases the velocity of the sweep toward either extreme.

Developed with Pure Data by Miller Puckette: http://msp.ucsd.edu/
Vst possible by Pierre Guillot's Camomile: https://github.com/pierreguillot/Camomile