Virtual Analog Synthesis

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Intro

- Analog synthesis: capacitors, resistors, opamps
- Virtual: in software, replicating the behavior
- Several channels for many simultaneous notes
- MIDI input
- Trivial sequencer

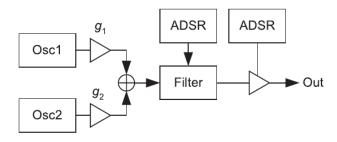
Moog synth



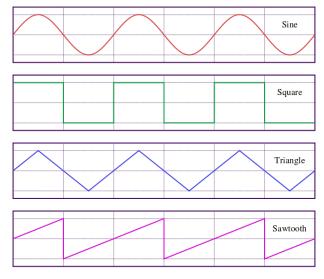
Chameleon DSP



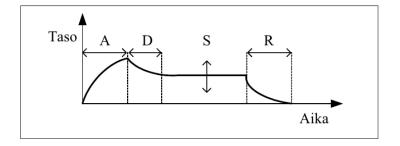
Structure



Waveforms



ADSR



An envelope for every instrument's output volume

- Simple lowpass filtered saw
- Saw with sinewave LFO on LP cutoff
- Saw with ADSR on lowpass cutoff
- Pulse with ADSR on duty cycle
- 6 Highpass filtered noise (hi-hat drum)
- 4-pole-LP filtered saw
- 4-pole-HP filtered noise

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- Saw with sinewave LFO on LP cutoff
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- Pulse with ADSR on duty cycle
- 4 Highpass filtered noise (hi-hat drum)
- 4-pole-LP filtered saw
- 4-pole-HP filtered noise

- Simple lowpass filtered saw
- Saw with sinewave LFO on LP cutoff
- Saw with ADSR on lowpass cutoff
- Pulse with ADSR on duty cycle
- Mighpass filtered noise (hi-hat drum)
- 4-pole-LP filtered saw
- 4-pole-HP filtered noise

Simultaneous play

isi.mid by viznut

Sequencer

- Simple recording of note events
- Save a background tune
- Play different instrument manually

Live music

- We're not musicians, sorry
- Anyone?