SP Exam Miniproject

Life on Mars (?)

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Outline

Assessments
Life on Mars (?)

- environment: some unknown planet
- let's suppose many carbon based lifeforms exists, which are different from ours
- let's suppose sound is able to propagate
- how to describe them?

Inspiration

Figure: *Environment thumbnails III* (courtesy Alba Francescut)

Outline

Physical models I

- three different types of blows have been combined together
- aim: represent a complete set of possible wind sounds

Physical models II

- air turbulence against a solid surface: sdt.windflow~
- air turbulence inside a cavity: sdt.windcavity~
- air turbulence across thin objects: sdt.windkarman~

Outline

Modifiers I

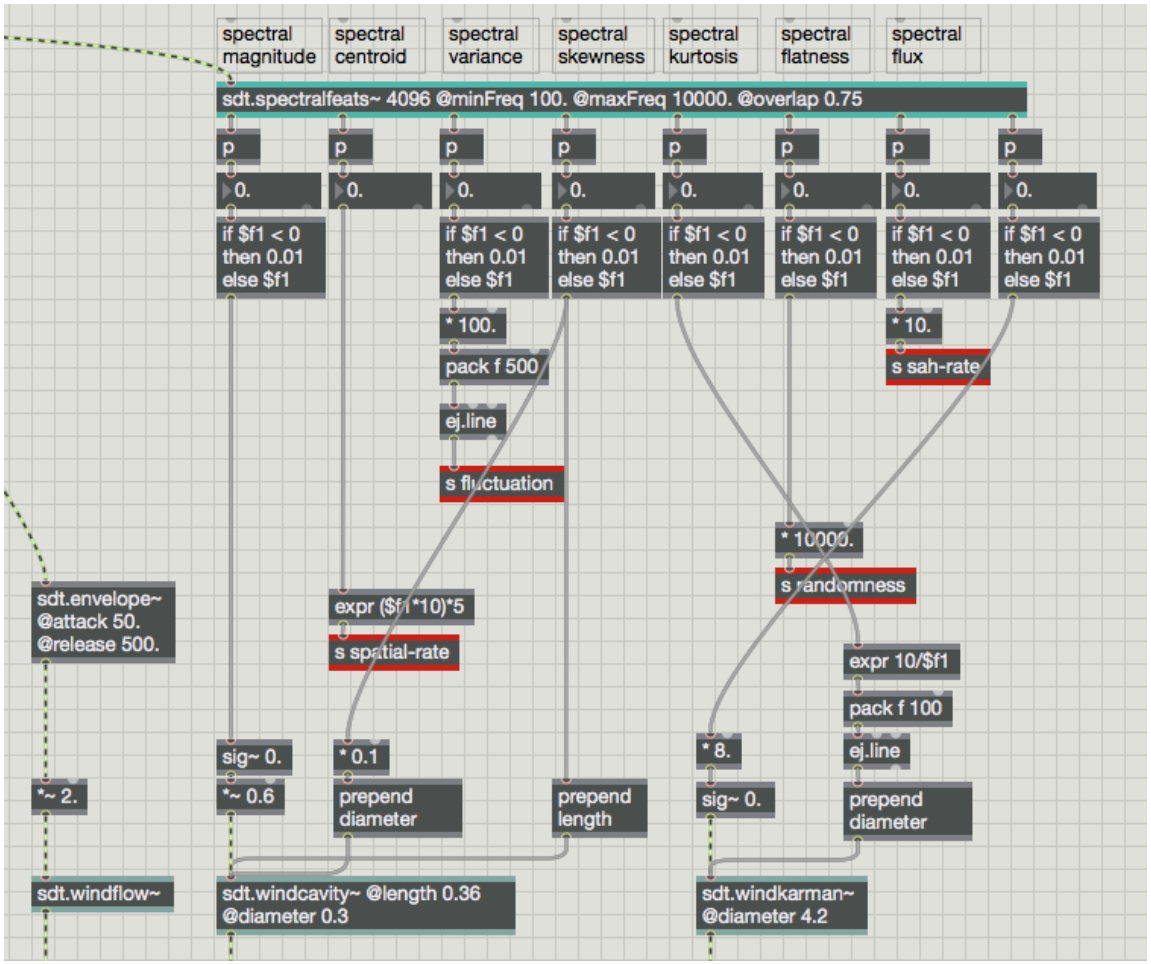

Figure: descriptors and their use

Modifiers II

sdt.windflow~

envelope follower: speed

sdt.windcavity~

- magnitude: speed
- skewness: diameter (heuristics for scaling) and length

sdt.windkarman~

- rectified flux: speed
- kurtosis: diameter (scaled and inverted)

Outline

Filtering stage I

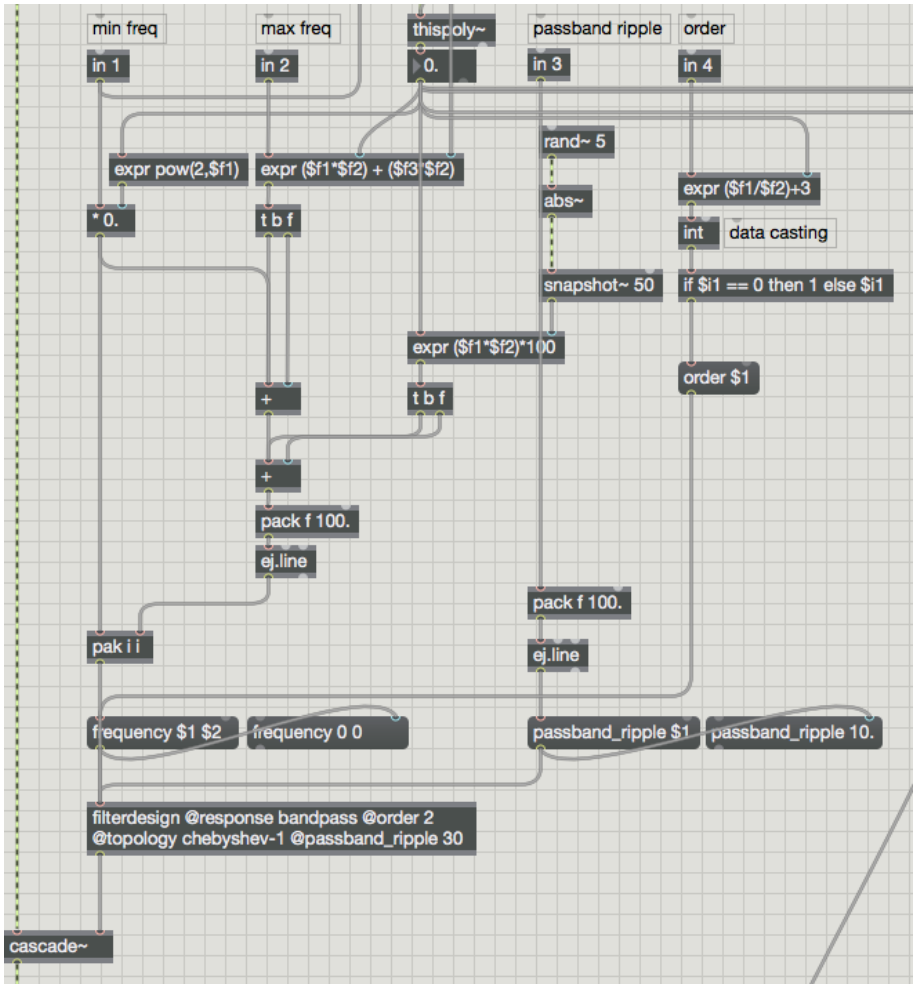

Figure: filtering stage: biquad

Filtering stage II

Input parameters:

- min-max frequencies
- ripple
- order
- (topology and response fixed)

Filtering stage III

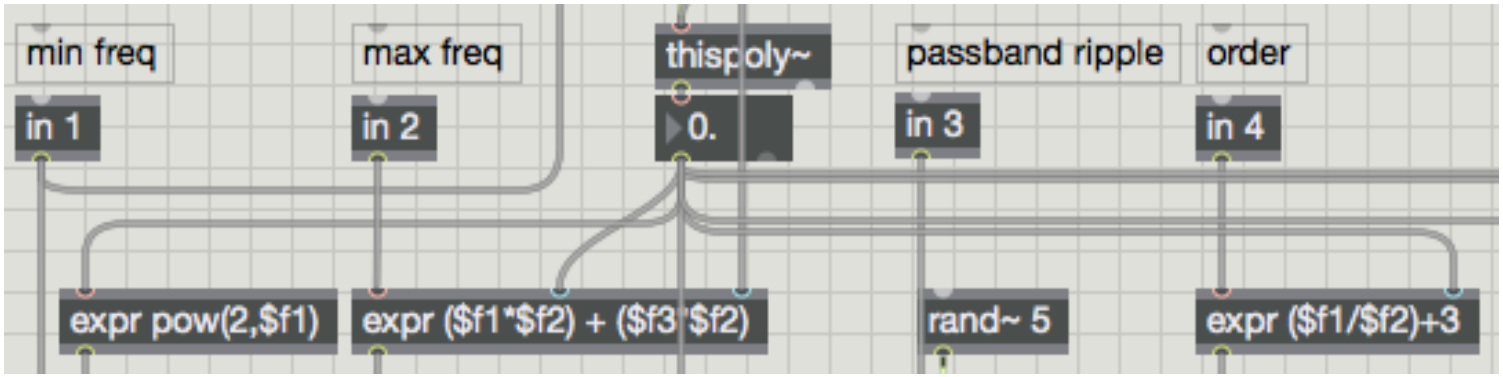

Figure: use of poly~

- biquad filter using Max filterdesign object
- poly~ allows for many instances

Delay stage

- using tapin~/tapout~
- feedback path

Pan stage

- using random signal
- scaled and shifted between 0 and 1

Samples *scrambling* stage I

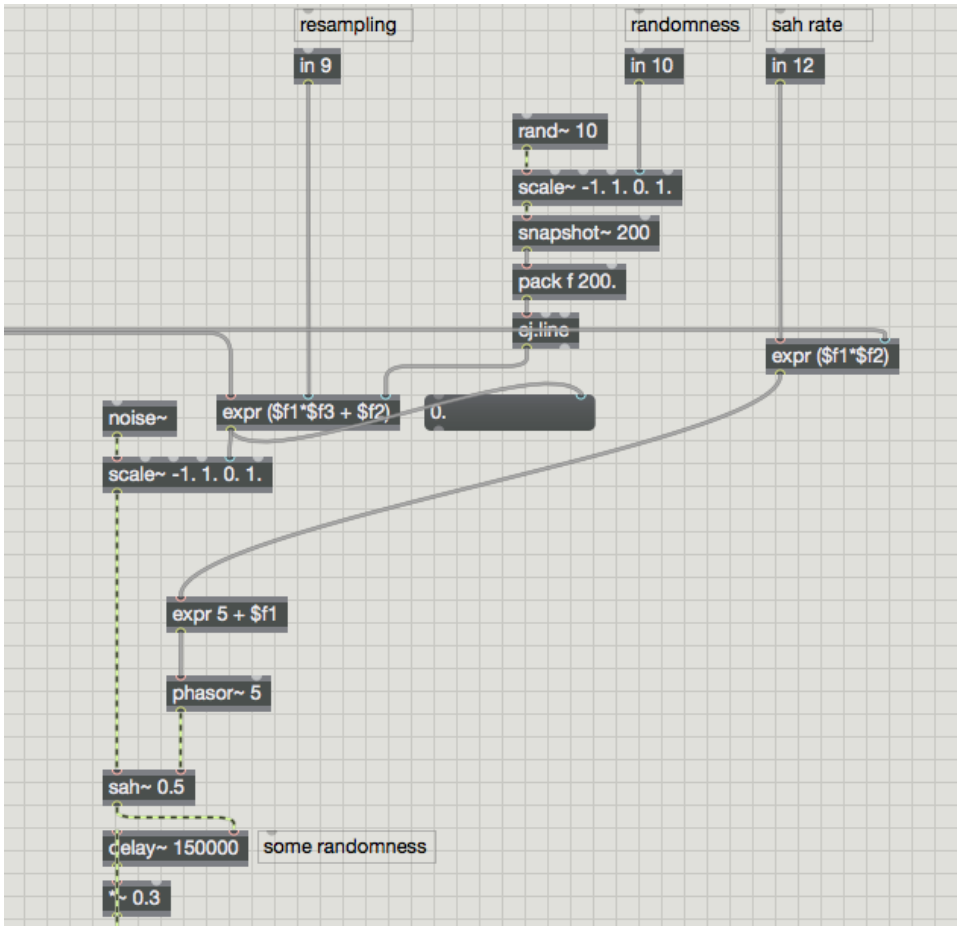

Figure: sampling scramble using delay~

Samples *scrambling* stage II

- using sah~ to dinamically change delay time (in samples)
- resampling depends on instance of poly~, as well as on randomness

Outline

Modifiers III

filtering section

variance: fluctuation on filter min frequency (heuristic for scaling)

delay section

pitch: general time

pan

centroid: spatial rate

samples scrambing

- flatness: randomness
- spectral flux: sah~ trigger signal rate

Result

- *electronic* wind + insects(?)
- shiny perturbations and resonances for high ripple values

(that's all folks)