

# VoiceOfFaust

- Turns any monophonic sound into a synthesizer, preserving the pitch and spectral dynamics of the input.
- The name was chosen because I use it mostly to turn my voice into a singing robot, and it's made in Faust.

# Overview

At it's core, VOF is based on:

- A pitchtracker
- Various algorithms to impose the spectral dynamics of the source sound on the output

# Spectral Dynamics

- Various channel vocoders
- A sine wave FM'd by the voice
- Various oscillators ringmodulated by the voice
- KarplusStrong used as an effect
- Phase modulation used as an effect

# Channel vocoders

- All frequencies are relative to the input pitch
- Two types:
  - A classic vocoder with:
    - a "super-saw" / "super-pulse" cross-fade
    - flexible Q and frequency setting for the filters
    - an elaborate feedback and distortion matrix around the filters
  - A couple of vocoders based on oscillators with controllable formants instead of the output filters
    - CZ resonant
    - PAF
    - FM
    - FOF

# Non-vocoder synths and effects

- Fmsinger
  - A sine wave that modulates its frequency with the input signal
- Czringmod
  - Ringmodulates the input audio with emulations of Casio CZ oscillators
- KarplusStrongSinger
- KarplusStrongSingerMaxi

# General features

- powerful parameter mapping system
- All oscillators are synchronized to a single saw-wave
- oscillator phase modulation
- All synths are spatialized at their core
- flexible in and output routing
- doubleOscs
- formant compression/expansion
- multi-band deEsser and reEsser

# master-slave

- a workaround for the need for an external pitchtracker
  - makes it possible to use these as plugins
  - side effect: your sounds become fully deterministic
- The master receives the audio and the OSC messages from the external pitch tracker, and outputs:
  - a copy of the input audio
  - a saw wave defining the pitch and phase
  - the value of fidelity, from the pitch tracker, as audio.
- The slaves are synths and effects that input the above three signals

# Questions?

More info at:

<https://github.com/magnetophon/VoiceOfFaust>