

OEDIPE

Software for speech analysis and processing

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Category : *Speech - acoustical analysis and processing*

A NeXT Step application for research in phonetic and auditory perception.

It was developed under NeXT step 1.0 in 1990 and upgraded for 2.1 in 1992.

In its present version it performs basic operations on temporal waveforms and on spectrums. As a unique feature compared to commercial products, it allows spectral modifications associated with inverse Fourier transform and sound play back.

As it is intended to be a core of facilities for basic research it can be used interactively with a user's own processing programs through files of temporal waveforms (.snd format) or files of Fourier transform results (specified .spec format).

Functions include:

Recording, playing and saving sounds in the .snd format

Temporal waveform processing

- editing (selecting, copying, cutting, pasting)
- increase/decrease amplitude (in dB)
- shape with trapeze envelope (to avoid onset/offset transients)
- merge waveforms (add, subtract)
- multiply waveforms
- zoom

- compute and display spectrum

Spectral processing

- adjust spectral analysis parameters
 - FFT size
 - Pre-emphasis
 - Overlapping windows
 - Hamming, Hanning or Blackman windowing
- adjust speech spectrogram view set-up
 - frequency bandwidth

number of grey levels (5 or 10)
depth of level (1 to 10 dB)
maximum level

- display two dimensional (instantaneous) spectrum
- display of spectrotemporal information for each element
- select and modify one or a group of spectro-temporal elements
 - add dB
 - set at a given value
- performs inverse Fourier transform

- saves Fourier transform results

A future version currently under development will make OEDIPE extensible as Interface Builder does with loadable palettes. This means it would be able to dynamically load and execute any customer developed operator.