Multiple Fundamental Frequency Estimation & Tracking Submission for MIREX 2016

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ABSTRACT

We are submitting our SONIC system, developed for transcription of piano music [1] and available at http://lgm.fri.uni-lj.si/SONIC.

The system performs partial tracking by a combination of an auditory model and adaptive oscillator networks. Synchronization of adaptive oscillators to periodicities in auditory filter outputs is exploited to track partials in a musical signal, while grouping of adaptive oscillators into networks is used to track groups of partials simultaneously.

Neural networks, trained on synthesized piano music, perform frame-based fundamental frequency estimation based on output of oscillator networks and overall signal magnitude.

Note estimation is obtained by an additional onset detector and assignment of found F0 tracks to onsets.

REFERENCES

[1] M. Marolt, "A Connectionist Approach to Automatic Transcription of Polyphonic Piano Music," in *IEEE Transactions on Multimedia (Volume:6 , Issue: 3)*, 2004.