

A NOVEL TIMELINE ADJUSTMENT FUNCTIONALITY FOR THE INTERPRETATION SWITCHER

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Extended Abstract

In this demo we present novel functionalities for a user interface referred to as *Interpretation Switcher*, which has emerged from the previously developed *SyncPlayer* system [1]. This interface allows a user to select several recordings of the same piece of music, which have previously been synchronized [2]. Each of the recordings is represented by a slider bar indicating the current playback position with respect to the recording's particular timeline, see Fig. 1. The user may listen to a specific recording by activating a slider bar and then, at any time during playback, seamlessly switch to any of the other versions.

In addition to the switching functionality, our current version of the Interpretation Switcher also allows for visualizing annotations below each individual slider bar. Such annotations may encode the harmonic progression (chord labels) or may indicate structural information such as the musical form. Based on these annotations, the Interpretation Switcher also facilitates intra-document navigation, where the user can directly jump to the beginning of any structural element simply by clicking on the corresponding block.

We have further extended the functionalities of the Interpretation Switcher by realizing three different modes for representing the timelines of the recordings. In the *absolute mode*, each timeline encodes absolute timing, where the length of a particular slider bar is proportional to the duration of the respective recording, see Fig. 1a. In the *relative mode*, each timeline encodes relative timing, where the length of all slider bars coincide, see Fig. 1b. In other words, in the relative mode all timelines are linearly stretched to yield the same length. The third mode, which is referred to as *reference mode*, is the most interesting one. Here an arbitrary but fixed recording can be selected to act as a reference. Then, all timelines of the other recordings are temporally warped to run synchronously to the reference timeline.

One feature of our timeline adjustment functionality is that the annotations indicated below the slider bars are also adjusted according to the respective mode. Thus, the different timeline modes allow for generating different views

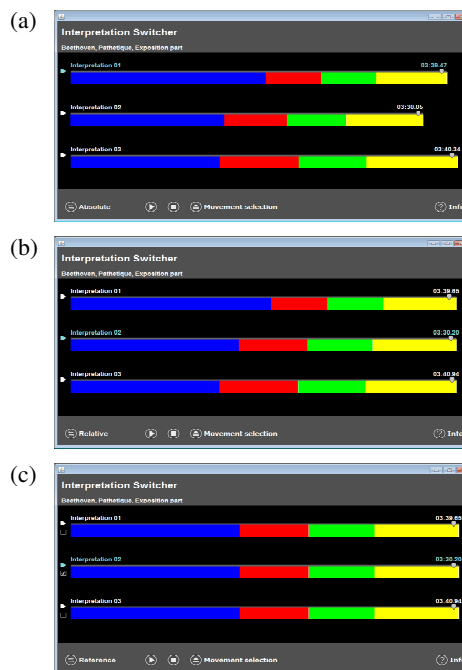


Figure 1: Interpretation Switcher opened with three different recordings of the exposition of Beethoven's Pathétique Sonata. The annotations (corresponding to the colored blocks) indicate four musically meaningful sections of the exposition. (a): Absolute mode. (b): Relative mode. (c): Reference mode (using the second recording as reference).

on these annotations. For example, using the reference mode, all annotations are warped onto a common timeline, which then facilitates a direct comparison of the annotations across the recordings. This is a very useful feature—in particular when the reference corresponds to ground-truth annotations—when evaluating recording-dependent annotations, which were extracted directly from the different recordings by means of automated procedures. Furthermore, when the reference corresponds to an uninterpreted MIDI version that represents a musical score, the reference mode allows for presenting all annotations with respect to a musically meaningful timeline, where time is given in measures and bars rather than seconds.

1. REFERENCES

- [1] Christian Fremerey, Frank Kurth, Meinard Müller, and Michael Clausen. A demonstration of the SyncPlayer system. In *Proc. ISMIR*, pp. 131–132, 2007.
- [2] Meinard Müller. *Information Retrieval for Music and Motion*. Springer Verlag, 2007.