1023-68-1756 **Ching-Hua Chuan*** (chinghuc@usc.edu), 3737 Watt Way, PHE 104, Los Angeles, CA 90089-0271, and **Elaine Chew** (echew@usc.edu), 3715 McClintock Avenue GER 240 MC:0193, Los Angeles, CA 90089-0193. *A Dynamic Programming Approach to the Extraction of Phrase Boundaries from Tempo Variations in Expressive Performances.* Preliminary report.

We present a computational algorithm for the purpose of segmenting expressive musical performances into phrases based on tempo variations extracted from the audio recording. According to Palmer and Hutchins, the phrase is a musical unit that is often demarcated by prosodic cues. Researchers such as Gabrielsson, Kendall & Carterette, Todd, and Palmer have found that performers tend to indicate phrase boundaries by lengthening note values at these boundaries and by increasing the time between successive tones. We explore the question: Can we extract phrase boundaries in expressive performances from the tempo variations alone? We design a computational technique that segments the tempo time series of a piece into a sequence of best-fit phrase arch curves in order to extract the phrase structures projected in a performance of a piece. The phrases are modeled using a variety of quadratic curves, and their boundaries are determined using dynamic programming. We apply the technique to Chopin's Preludes (Nos. 1 & 7) and Ballade (No. 3), and present and discuss the computational results. (Received September 26, 2006)