Presented at **CogMIR**,
New York, USA, August 2016

Exploring melodic similarity in Hindustani classical music through the synthetic manipulation of raga phrases

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Abstract

A raga performance in North Indian classical music builds upon a melodic framework where the characteristic phrases of the raga appear repeatedly and with considerable creative variation while strongly retaining their identity. It is of interest for both, music retrieval and pedagogy, to understand better the space of "allowed" variations of the melodic shape corresponding to a raga phrase. We present a study of melodic shapes corresponding to a selected raga phrase extracted from performances by eminent vocal artists which leads us to two main dimensions of variation, namely, the precise intonation of steady notes and temporal extent of a passing note. Several synthetic but musically consistent versions of the phrase are generated from the canonical form and presented to musicians in a rating task related to the raga identifiability of the stimulus. We observe that the ratings are nearly categorical with differences above a threshold corresponding to a gross change in perception from the given raga to a different raga. We intend to extend the study to brain waves and report the measurement of the P300 ERP in an oddball paradigm based perception test to strengthen the results of the behavioral experiment.