



## Comparative Analysis of Music Recordings from Western and Non-Western traditions by Automatic Tonal Feature Extraction

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The automatic analysis of large musical corpora by means of computational models overcomes some limitations of manual analysis, and the unavailability of scores for most existing music makes necessary to work with audio recordings. Until now, research on this area has focused on music from the Western tradition. Nevertheless, we might ask if the available methods are suitable when analyzing music from other cultures. We present an empirical approach to the comparative analysis of audio recordings, focusing on tonal features and data mining techniques. Tonal features are related to the pitch class distribution, pitch range and employed scale, gamut and tuning system. We provide our initial but promising results obtained when trying to automatically distinguish music from Western and non-Western traditions; we analyze which descriptors are most relevant and study their distribution over 1500 pieces from different traditions and styles. As a result, some feature distributions differ for Western and non-Western music, and the obtained classification accuracy is higher than 80% for different classification algorithms and an independent test set. These results show that automatic description of audio signals together with data mining techniques provide means to characterize huge music collections from different traditions and complement musicological manual analyses.

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