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Psychoacoustic measures of blind audio source separation
performance

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In this paper, an improved method for evaluating the performance of blind audio source separation (BASS) is discussed. In previous studies, such as described in E. Vincent et al., *IEEE Transactions on Speech and Audio Processing*, 2006, several computation methods for measuring quality of BASS algorithms e.g. defined by source-to-distortion ratio (SDR), source-to-interferences ratio (SIR), sources-to-noise ratio (SNR) and sources-to-artifacts ratio (SAR) are introduced. However, those methods do not take human auditory system into consideration. An improved method is developed by applying pre-processing and using weighted-inner product in frequency domain instead of simple inner-product in time domain. The proposed method incorporates well-known psychoacoustic characteristics e.g. masking effect and equal loudness contours. In comparison with the conventional quality measures, the proposed method shows better correlation with the results of carefully designed listening tests.