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Research Letter

Time Domain Method for Precise Estimation of Sinusoidal Model Parameters of Co-Channel Speech

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Abstract

A time domain method to precisely estimate the sinusoidal model parameters of cochannel speech is presented. The method does not require the calculation of the Fourier transform nor the multiplication by a window function. It incorporates a least-squares estimator and an iterative technique to model and separate the cochannel speech into its individual speakers. The application of this method on speech data demonstrates the effectiveness of this method in separating cochannel speech signals in different target-to-interference ratios. This method is capable of producing accurate and robust parameter estimation in low signal-to-noise ratio situations compared to other existing algorithms.