Blind Speech Separation Using SRP-PHAT Localization and Optimal Beamformer in Two-Speaker Environments

Authors : Hai Quang Hong Dam, Hai Ho, Minh Hoang Le Ngo

Abstract : This paper investigates the problem of blind speech separation from the speech mixture of two speakers. A voice activity detector employing the Steered Response Power - Phase Transform (SRP-PHAT) is presented for detecting the activity information of speech sources and then the desired speech signals are extracted from the speech mixture by using an optimal beamformer. For evaluation, the algorithm effectiveness, a simulation using real speech recordings had been performed in a double-talk situation where two speakers are active all the time. Evaluations show that the proposed blind speech separation algorithm offers a good interference suppression level whilst maintaining a low distortion level of the desired signal.