



A BLIND SOURCE SEPARATION METHOD FOR CONVOLVED MIXTURES BY NON-STATIONARY VIBRATION SIGNALS

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Abstract- A simple and feasible of BSS method to separate the convolution mixture of non-stationary vibration signals is present in this paper. The method is carried out by means of two iterative procedures: The first procedure is to estimate the coefficients of the filters. The independence criterion is used and the unknown filters are obtained by a back propagation procedure by means of simplifying the coefficients of filters. The next procedure is to estimate the source vibration signals. The coupled vibration signals are obtained by means of the filters gotten from the former procedure and the estimation sources are obtained through decoupled procedure. Simulation and experiment results show that the method is effective. This improved method can be used to separate convolutive mixtures with non-stationary mechanical vibrations.

Index terms: Mechanical Vibration, Blind Source Separation, Convolution Mixture, Non-stationary.