

Blind Source Separation for Audio Signals Based on Second Order Statistics

R. Aichner, U Erlangen

In this talk an overview and an introduction to blind source separation (BSS) for audio signals is given. Basic ideas and fundamental signal properties which are essential for BSS applied to convolutive mixing systems are reviewed. Subsequently a generic algorithm based on a time-domain cost function is derived. Efficient implementations of this broadband algorithm and links to traditional narrowband frequency-domain algorithms which apply BSS in each frequency bin independently are outlined. Moreover, results of an efficient broadband algorithm capable of real-time separation of speech signals in reverberant environments are presented. In the end noise-robustness of the proposed algorithm will be examined showing its applicability to real-world environments.