BLIND SEPARATION OF COMPLEX−VALUED MIXTURES: SPARSE REPRESENTATION IN POLAR AND CARTESIAN SCATTER−PLOTS (MonPmOR1)

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Abstract :

This study is concerned with reconstruction of complex−valued components comprising a linear mixing model of unknown real−valued sources, given a set of their complex−valued mixtures. We adopt previous results in the area of Blind Source Separation (BSS) of linear mixtures, based on sparse representation by means of a multiscale framework such as wavelet packets, and exploit the properties of sparse representation obtained by projection onto a proper space. We propose two techniques, developed for dealing with complex−valued mixtures of real sources and incorporate sparsity−dependent clustering via projection onto a proper space; one onto polar coordinates, and the other onto cartesian coordinates. We describe various aspects of the proposed techniques, and present an experiment of noisy mixtures of images.

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