BLIND SEPARATION OF A DYNAMIC IMAGE SOURCE FROM SUPERIMPOSED REFLECTIONS (ThuAmOR9)

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✱ Abstract : Blind source separation (BSS) has been successfully applied in separation of static images from reflections superimposed on the desired image by a semi–reflective medium. In our previous study [1], we have shown simulation results for the separation of dynamic reflections. Here we further discuss this problem and show results of experimental data for separation of dynamic images. We also illustrate an application concerned with recovery of images acquired through a semi–transparent cloudy medium. This is a more complex problem in that the mixtures are not stationary in space, the mixing coefficients vary in the presence of clouds, and the mixtures involve also multiplicative and convolutive components. We apply the three–dimensional spatio–temporal Sparse ICA (SPICA) method on simulations of linearly mixed moving landscape, contaminated by the interference of clouds. We then incorporate a nonlinear multiplicative interaction and examine its effects on the SNR of the recovered image. We illustrate preliminary promising results.

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