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Abstract

The performance of ICA algorithms significantly depends on the choice of the contrast function and the optimisation algorithm used in obtaining the demixing matrix. In this paper we focus on the standard linear nonparametric ICA problem from an optimisation point of view. It is well known that after a pre-whitening process, the problem can be solved via an optimisation approach on a suitable manifold. We propose an approximate Newton's method on the unit sphere to solve the one-unit linear nonparametric ICA problem. The local convergence properties are discussed. The performance of the proposed algorithms is investigated by numerical experiments.

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