FIRST RESULTS ON UNIQUENESS OF SPARSE NON−NEGATIVE MATRIX FACTORIZATION (MonAmOR9)

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Abstract :

Sparse non−negative matrix factorization (sNMF) allows for the decomposition of a given data set into a mixing matrix and a feature data set, which are both non−negative and fulfill certain sparsity conditions. In this paper it is shown that the employed projection step proposed by Hoyer has a unique solution, and that it indeed finds this solution. Then indeterminacies of the sNMF model are identified and first uniqueness results are presented, both theoretically and experimentally.

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