



COMPLEX ICA FOR CIRCULAR AND NON-CIRCULAR SOURCES (TueAmOR11)

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✳ **Abstract :** In this paper we propose an information theory based generic method for complex Independent Component Analysis (ICA). Expressions for the complex score function are derived. The method exploits the full second order structure of complex signals. It combines a preprocessing step called the strong-uncorrelating transform (SUT) with ICA methods that use the proposed complex score function. The method is capable of separating circular or non-circular and symmetric or asymmetric source distributions from complex mixtures. It allows the separation of such signals with relatively simple modifications to existing methods for real-valued signals. The performance of the proposed method is compared to the standard complex JADE and FastICA algorithms in a simulation.

[Menu](#)