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# ANALYSIS OF ICA AND FAST ICA ALGORITHMS FOR EEG SIGNALS

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**Abstract**

This paper describes the comparison of ICA (Independent component analysis) and our method FAST ICA applied to the (Electroencephalogram) EEG data. Before applying ICA, preprocessing of the EEG data (Centering and Sphering) is done. ICA and Fast ICA then separates the components from the mixed EEG data. Methodology used to separate the components using ICA and FAST ICA is presented in this paper. Tabular method shows, that the time required to separate the components using our algorithm (1.221449 sec.) is very less as compared to ICA (5.02967 sec.). Thus with the help of Fast ICA near about same accuracy is achieved as in ICA, with some time improvement.

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Key Words : Electroencephalogram (EEG), Cross Validation, Auto Regression (AR), Brain Computer Interface (BCI).