SINGLE-TRIAL EEG ANALYSIS USING AN ADAPTIVE AUTOREGRESSIVE MODEL

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An important consideration for the implementation of a Brain Computer Interface (BCI), is the analysis of the temporal variation of the EEG on a single-trial basis. Parameters need to be extracted which can be used as features for classification e.g. between left and right finger movement.

Autoregressive (AR) models are often used in analysis of the EEG. Typically, parameters are estimated from consecutive segments, thus providing a time course of the variation of the EEG characteristics. Another possibility is the use of Adaptive AR (AAR) models.

We applied the AAR method to the analysis of movement-related EEG data from three normal subjects, and compared these results to different EEG parameters calculated based on the segmentation approach.

It could be shown that the AAR parameters give better classification results compared with the other methods.

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