
Comprehensive spatio-temporal analysis of event-related potentials

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Abstract

In this talk I will explain ERP analysis methods that are based on the temporal variations of the scalp electric field, rather than on changes of amplitudes or latencies at certain electrodes. The spatial analysis techniques have the advantage of being reference-independent and thus non-ambiguous and that they do not require a pre-selection of electrodes or time periods of interest. The basic aim of the spatial analysis approach is to look for significant topographic changes of the electric field across time or between conditions, because differences in topography directly indicate differences in the underlying generators. I will illustrate the method with ERPs in language comprehension as well as language production tasks.

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