



BCB/IGERT Thesis Seminar

Algorithms and Procedures to Analyze Physiological Signals in Psychophysiological Research

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Abstract::

This dissertation presents analytical techniques which allow more information to be derived from psychophysiological data than otherwise possible. The techniques include an implemented algorithm for chest strain-gauge respiration signal analysis and a permutation testing method for evaluating changes over time in physiological signals. These methods are applied to three data sets, each examining physiological correlates of emotional experience. In the first study physiological correlates of moods induced using music were identified, although respiration entrainment confounds the issue of whether mood or the music caused the observed patterns. The second study examined physiological responses while subjects watched an emotional movie under three conditions; changes relating both to the movie scenes and condition were identified. Finally, the third study evaluates short term changes in heart rate while viewing words in terms of the type of word viewed and later word recall.