RUB

PHILOSOPHY MEETS COGNITIVE SCIENCE

Stiftung Mercator

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Research Group

Organization and contact: Prof. Dr. Markus Werning.
Website: www.rub.de/phil-lang.
Venue: Thu., 06. May 2010, 16-18h, in room HMA 40.
All interested students, scientists, and scholars are cordially
invited to the following talk of the research colloquium:

Dr. Antje Krumnack
(Justus Liebig University Gießen)

Beamforming and Coherence Techniques for Analyzing EEG-Data

In this talk, Krumnack discusses two methods for analyzing EEG-Data: beamforming and coherence. Beamforming is a method that allows reconstructing the sources of the potential curves that constitute the EEG-Data. To accomplish this, a beamformer tries to reconstruct the contribution of a single location to the measured field by constructing a filter that blocks all other sources. Conventional coherence on the other hand is a linear correlation coefficient that estimates the account of phase synchronization between any two data channels by determining the correlation between their spectra. Since this coefficient does not have a temporal component wavelet coherence is often employed to monitor time-independent changes in coherence between channels.

Dr. Antje Krumnack received a diploma in Mathematics from the University of Düsseldorf and a diploma in Psychology from the RWTH Aachen. She pursued her doctoral studies at the Department of Algorithms and Data Structures of Prof. Dr. Wanke at the University of Düsseldorf on the topic of algorithmic analysis of macroscopic connectivity structures in the primate brain. Currently Dr. Krumnack works as a postdoc at the University of Gießen in the Department of Experimental Psychology and Cognitive Science of Prof. Dr. Knauff on modeling cognitive processes. She has published a.o. in *NeuroImage*, *Neural Networks*, and *Frontiers in Neuroinformatics*.