



PHYSIKALISCHES KOLLOQUIUM

des Fachbereichs Physik
der Johann Wolfgang Goethe-Universität Frankfurt

Mittwoch, den 14.12.2016, 16 Uhr c.t.
Großer Hörsaal, Raum _0.111,
Max-von-Laue-Str. 1



Prof. Claus Hilgetag

Department of Computational Neuroscience,
University Medical Center Eppendorf,
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"Relating topology and dynamics of excitable neural networks"

Brain connectivity is characterised by a number of distinctive topological features, such as a heterogenous degree distribution with hubs, hierarchically organised modules, as well as a characteristic spectrum of motifs and cycles. These features have consequences for different aspects of brain dynamics, such as self-sustained network activity, the wave-like propagation of activity as well as correlations and anti-correlations of activity patterns. We have systematically investigated the relation between neural network topology and dynamics with the help of a general excitable (cellular automaton) model which allows a mechanistic understanding of the contribution of different topological features of brain networks to brain dynamics.

Die Dozenten der Physik

local host: Prof. Dr. Jochen Triesch, j.triesch@fias.uni-frankfurt.de