

## FREIE UNIVERSITÄT BERLIN Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

# DISPUTATION

**Mittwoch, 22. Oktober 2014, 10.00 Uhr**

**Ort: Seminarraum 031, Arnimallee 6, 14195 Berlin**

**Disputation über die Doktorarbeit von**

**Frau Sharon Hüffner**

**Thema der Dissertation:  
Modularity in Biological Networks**

**Thema der Disputation:  
Modularity in Brain Networks**

Die Arbeit wurde unter der Betreuung von **Prof. Dr. Chr. Schütte** durchgeführt.

Abstract: Brain networks are a way of representing the structure and function of the brain. Nodes correspond to brain regions, and edges between them correspond to similarity or correlation in measurements from experiments. Recently, it has been demonstrated that the brain networks of healthy subjects differ from those of patients diagnosed with conditions like autism (Rudie et al, 2012), schizophrenia (Lynall et al., 2010), and epilepsy (Chavez et al., 2010). One difference is in how these networks are partitioned into *modules*: dense subgraphs sparsely connected to one another. The overall structure of modules in a network is sometimes described by a single number: the *modularity*. In this talk I will introduce brain networks and their construction. I will then present some results on the modularity and properties of modules found in the brain networks of different patient types, and what these differences can imply about our understanding of complex disorders.

Die Disputation besteht aus dem o. g. Vortrag, danach der Vorstellung der Dissertation einschließlich jeweils anschließenden Aussprachen.

**Interessierte werden hiermit herzlich eingeladen**

Der Vorsitzende der Promotionskommission  
Prof. Dr. Chr. Schütte