

A U S H A N G

FREIE UNIVERSITÄT BERLIN Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

DISPUTATION

Freitag, 11. Dezember 2015, 15.00 Uhr

**Ort: Seminarraum (Raum 2006)
Konrad-Zuse-Zentrum für Informationstechnik Berlin (ZIB)
Takustrasse 7, 14195 Berlin**

Disputation über die Doktorarbeit von

Herrn Vincent Jasper Dercksen

Thema der Dissertation:

**Visual computing techniques for the reconstruction and analysis
of anatomically realistic neural networks**

Thema der Disputation:

Visual analysis of high-dimensional parameter spaces

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

Abstract: Systems projecting an n -dimensional parameter space to an m -dimensional target space play an important role in science and engineering. If evaluating the system is expensive, analysis is often limited to a small number of sample points. This makes understanding the relation between input and output space challenging. After a general overview of techniques for visual analysis of high-dimensional data, I will present an interactive approach for continuous analysis of a sampled parameter space with respect to multiple target values (Berger et al., 2011), e.g. to assess sensitivity. Second, I will present an algorithm for finding an optimal set of projections of a high-dimensional point data set (Lehmann and Theisel, 2016) in order to gain maximal insight into the structure of the data with a minimal number of 2D projections. In the second part of the presentation, I will present my PhD work on the 3D modeling and analysis of neural networks, based on anatomical data reconstructed from 3D microscope images.

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