

A U S H A N G

FREIE UNIVERSITÄT BERLIN

Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

D I S P U T A T I O N

Freitag, 14. Februar 2020, 14:00 Uhr

Ort: WIAS-ESH

(WIAS, Mohrenstr. 39, 10117 Berlin)

Disputation über die Doktorarbeit von

Frau Laura Caroline Blank

Thema der Dissertation:

Analytical and Numerical Aspects of Porous Media Flow

Thema der Disputation:

MR Imaging and Direct Pressure Estimation in Stenotic Vessels

Die Arbeit wurde unter der Betreuung von **PD Dr. A. Caiazzo** durchgeführt.

Abstract:

Magnetic resonance imaging (MRI) has established as an important imaging modality in clinical practice and is utilized for the noninvasive diagnosis of diverse diseases. Besides anatomic information, also physiological processes can be captured, i.e., for example time-resolved blood velocity data (Flow MRI) in vessels can be obtained. In case of, e.g., stenotic vessels, clinical gold standard for stenosis evaluation are invasively measured trans-stenotic pressure drops. In particular the associated risks have motivated research for alternatives allowing to obtain pressure information in a noninvasive way.

This talk aims at introducing the principle concepts of signal generation in MRI. Therefore, alignment, precession, excitation, tissue-dependent relaxation, and localization are discussed. Finally, two approaches for the direct pressure difference estimation from velocity data (e.g., from 4D Flow MRI) are presented.

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
PD Dr. A. Caiazzo