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

Donnerstag, 22. August 2019, 10:30 Uhr

Ort: Seminarraum02
(Max-Planck-Institut, Ihnestr.63-73,14195 Berlin)

Disputation über die Doktorarbeit von

Frau Jinhua Liu

Thema der Dissertation:

Bioinformatic Reconstruction of Gene Regulatory Networks Controlling EMT and Mesoderm Formation

Thema der Disputation:

Hidden Markov Models for Gene Regulatory Network Reconstruction

Die Arbeit wurde unter der Betreuung von **Prof. Dr. M. Vingron** durchgeführt.

Abstract:
A Hidden Markov model (HMM) is a statistical Markov model, which describes the relationship of the observed events and the causal hidden states. This computational method is nowadays widely used in bioinformatics. In the first part of the presentation, the algorithms for HMM will be reviewed. Then an extension of HMM, Input-Output Hidden Markov Model (IOHMM), will be introduced to discuss a software "Dynamic Regulatory Events Miner (DREM)" built on IOHMM. DREM integrates the time-series transcriptome and transcription factor-target gene interaction data to infer a global temporal gene regulatory network (GRN). In this GRN, the gene expression patterns are associated to transcriptional regulatory events and the corresponding transcription factors. This talk will be followed by a summary of my thesis entitled "Bioinformatic Reconstruction of Gene Regulatory Networks Controlling EMT and Mesoderm Formation".

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. M. Vingron