

# A U S H A N G

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## FREIE UNIVERSITÄT BERLIN Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

## DISPUTATION

**Freitag, 22. Januar 2016, 10.00 Uhr**

**Ort: Arnimallee 6, Seminarraum 009, Institut für  
Mathematik, 14195 Berlin**

**Disputation über die Doktorarbeit von**

**Herrn Haiyang Hu**

**Thema der Dissertation und der Disputation:  
Computational and Statistical Analysis of Sequence and Expression  
Features of MicroRNA and Long Noncoding RNA in Primate Brains**

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

Abstract: The discovery of various short and long noncoding RNA species (ncRNAs) including microRNA and long noncoding RNAs greatly expands our understanding of extraordinary complexity of human genome. Based on transcriptome data, accurate assessment of transcript coding potential (TCP) is the first step towards comprehensive annotation of newly identified transcripts and lays the foundation for further analyzing ncRNA function. It remains a challenge to accurately separating ncRNAs from protein-coding genes experimentally largely due to the limitations of current experimental techniques. Nevertheless, several computation tools have been developed to efficiently classify protein-coding and noncoding transcripts using the information of intrinsic sequence features or evolutionary signatures. In the first part of the presentation, current computational methods for assessing TCP will be reviewed. One approach employing Support Vector Machine (SVM) for TCP prediction will be discussed in detail. In the second part of the presentation, the thesis titled 'Computational and Statistical Analysis of Sequence and Expression Features of miRNA and long Noncoding RNA in primate Brains' will be summarized.

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