

**FREIE UNIVERSITÄT BERLIN**  
**Fachbereich Mathematik und Informatik**

Promotionsbüro, Arnimallee 14, 14195 Berlin

## **D I S P U T A T I O N**

**Dienstag, 9. Februar 2016, 11.00 Uhr**

**Ort: Raum 049, Takustr. 9, 14195 Berlin**

**Disputation über die Doktorarbeit von**

**Herrn Konstantin Okonechnikov**

**Thema der Dissertation:**

**High-throughput RNA sequencing:  
a step forward in transcriptome analysis**

**Thema der Disputation:**

**Discovery of fusion genes and chimeric transcripts  
from RNA-sequencing data**

Die Arbeit wurde unter der Betreuung von **Prof. Dr. K. Reinert** durchgeführt.

**Abstract:** Analysis of fusion genes and chimeric transcripts has become important due to their link with cancer development. After RNA-sequencing technology was established as an effective approach for the analysis of transcriptome, a number of computational methods for the detection of gene fusions from RNA-seq data have been developed. This kind of analysis, however, is complicated by native trans-splicing events, the splicing-induced complexity of the transcriptome and biases and artifacts introduced in experiments and data analysis.

In the first part of the talk existing fusion discovery methods from RNA-seq data will be described and their ability to detect various types of chimeric transcripts along with their limitations will be discussed. The second part of the talk will be devoted to a novel computational toolkit, which introduces several unique features and demonstrates superior detection accuracy in comparison to other tools.

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. K. Reinert