

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

Dienstag, 18. Juni 2019, 16:00 Uhr

Ort: Hörsaal 001

(Fachbereich Mathematik und Informatik, Arnimallee 3, 14195 Berlin)

Disputation über die Doktorarbeit von

Frau Alejandra Rincón Hidalgo

Thema der Dissertation:

**Bridgeland stability conditions on the category
of holomorphic triples**

Thema der Disputation:

Cluster Algebras and Cluster Categories

Die Arbeit wurde unter der Betreuung von **Prof. Dr. A. Schmitt** durchgeführt.

Abstract: Cluster algebras were introduced by S. Fomin and A. Zelevinsky as a combinatorial approach to total positivity in algebraic groups. In recent years several remarkable links between cluster algebras and particular topics in algebraic geometry, as Bridgeland stability conditions and Donaldson-Thomas invariants, have been studied.

The aim of this talk is to give an introduction to cluster algebras, to explain its link with representation theory of quivers and to introduce "categorifications" of cluster algebras given by 2-Calabi-Yau and 3-Calabi-Yau triangulated categories.

We first define a cluster algebra via quiver mutations and we discuss the Laurent and the positivity phenomena. We then explain the classification of cluster algebras of finite type in terms of Dynkin diagrams. We finally introduce cluster categories that are triangulated categories that "categorify" the essential combinatorial ingredients of a cluster algebra.

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. A. Schmitt