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, 19. Mai 2017, 10.00 Uhr

Ort: Seminarraum, Arnimallee 2, 14195 Berlin

Disputation über die Doktorarbeit von

Herrn Tobias Friedl

Thema der Dissertation:
Double posets and real invariant varieties
Two interactions between combinatorics and geometry

Thema der Disputation:
On Hopf algebras of posets and double posets

Die Arbeit wurde unter der Betreuung von **Prof. Dr. R. Sanyal** durchgeführt.

Abstract: Hopf algebras, originally studied in algebraic topology, have more recently found numerous applications in combinatorics. In this talk, I will present two Hopf algebras that arise from partially ordered sets.

The vector space whose basis consists of isomorphism classes of finite bounded posets has the natural structure of a Hopf algebra (also called the incidence Hopf algebra) and was first considered by Joni and Rota (1979). The antipode of this Hopf algebra is very natural from a purely combinatorial perspective and can for instance be used to recover a classical formula for the Möbius function due to Hall.

A double poset is a finite set equipped with two partial orders. Malvenuto and Reutenauer (2011) introduced a Hopf algebra of double posets, which is closely related to other wellstudied Hopf algebras, such as the Hopf algebra of quasi-symmetric functions and the Hopf algebra of permutations. We will also look at a particularly interesting subalgebra arising from plane double posets, which has been considered by Foissy (2013).

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. R. Sanyal