

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, 17. Januar 2020, 12:00 Uhr

Ort: Raum 019

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

Disputation über die Doktorarbeit von

Frau Giulia Codenotti

Thema der Dissertation:

Covering properties of lattice polytopes

Thema der Disputation:

Triangulations of products of simplices and the spread out simplices conjecture

Die Arbeit wurde unter der Betreuung von **Prof. Dr. C. Haase** durchgeführt.

Abstract:

A lozenge tiling of a dilation of a triangle is a tiling with triangular and rhomboidal tiles. Ardila and Billey proved that the set of positions which can be occupied by triangular tiles in a lozenge tiling have a simple geometric characterization, and they called such configurations of triangles spread out.

They then proposed the spread out simplices conjecture, which states that the same characterization holds in higher dimensions, where lozenge tilings are generalized as fine mixed subdivisions of a dilated simplex. Part of the interest in the conjecture comes from the fact that spread out configurations (in arbitrary dimension) are the bases of a matroid.

In this talk, we will introduce the necessary notions to formulate the spread out simplices conjecture, and show how it can be written as a statement about certain cells in triangulations of a product of two simplices. We will then mention some special cases where the conjecture is proven, and touch upon the connection between this conjecture and other topics in discrete mathematics.

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. C. Haase