

## DISPUTATION

**Dienstag, 15. Dezember 2015, 14.00 Uhr**

**Ort: Raum 025/026, Arnimallee 6, 14195 Berlin**

**Disputation über die Doktorarbeit von**

**Herrn Rostislav Devyatov**

**Thema der Dissertation:  
Equivariant deformations of algebraic varieties  
with an action of an algebraic torus of complexity 1**

**Thema der Disputation:  
Unipotent commutative group actions  
on flag varieties and nilpotent multiplications**

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

**Abstract:**

All varieties below are algebraic varieties over complex numbers.

A commutative unipotent algebraic group can be defined as the underlying additive group of a vector space. The question of the classification of actions of commutative unipotent groups on various projective varieties with an open orbit was raised by Hasset and Tschinkel in 1999. Since that time, it has been successfully solved for different classes of varieties, for example, for projective spaces, Hirzebruch surfaces, projective quadrics.

In my talk I will explain how to classify the actions of a commutative unipotent algebraic group on a flag variety, i. e. on a variety of the form  $G/P$ , where  $G$  is a semisimple algebraic group and  $P$  is a parabolic subgroup. More precisely, I will explain how to establish a relationship between this problem and the classification of multiplications with certain properties on Lie algebra representations, how to classify multiplications with the desired properties, and finally, how to solve the initial classification problem.

The talk is based on the paper "Unipotent commutative group actions on flag varieties and nilpotent multiplications" by the speaker (Transformation groups 20:1 (2015), pp. 21-64).

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. Altmann