



## EINLADUNG

### Mathematisches Kolloquium

Mittwoch, 22. März 2017

#### Vorträge

**14:15 Uhr: Andrei Okounkov** (Columbia University)  
“Monodromy and derived equivalences”

*Monodromy of linear differential equations is a very old topic in mathematics. Computing the monodromy of specific equations is like computing values of transcendental functions at certain special points, and this subject has seen an influx of new ideas for differential equations of geometric and representation-theoretic origin. Some very special equations, such as the so-called quantum differential equations for equivariant symplectic resolutions, lie on the crossroads of several branches of mathematics, and for them a very precise information is available. New material in my talk will be from a joint work with Roman Bezrukavnikov.*

**15:45 Uhr – Kaffeepause**

**16:15 Uhr: Peter Cameron** (University of St. Andrews)  
“The random graph”

*In 1963 Erdős and Rényi discovered the remarkable fact that, if edges of a graph are chosen independently from the 2-element subsets of a countable set, then there is a particular graph which occurs with probability 1. This graph has many interesting properties and has a large (and simple) automorphism group. The graph was constructed explicitly by Rado at about the same time (without noticing the connection); other constructions involve set theory and number theory. But there is a prehistory of this result. The random graph is an example of Fraïssé's theory of homogeneous structures and amalgamation classes, which he developed around 1950, which has applications in logic, Ramsey theory, and topological dynamics. But even earlier in 1924, a posthumous paper of Urysohn had used these ideas to construct a remarkable Polish space (complete separable metric space) which is universal and homogeneous. In fact, a slight variant of Urysohn's construction produces the random graph.*

#### Junior Kolloquium

**13:00 Uhr: Peter Cameron** (University of St. Andrews)  
“The ADE affair”

*In 1978, at a symposium on the Hilbert problems, Arnold proposed understanding the connections linking the occurrence of the Coxeter--Dynkin diagrams of types  $A_n$ ,  $D_n$ ,  $E_6$ ,  $E_7$  and  $E_8$  in parts of mathematics ranging from singularity theory to finite simple groups. I will speak about some aspects of this fascinating problem, including my own first meeting with the ADE classification in a research problem (describing graphs with least eigenvalue  $-2-2$ ).*

**Anschließend vinum cum pane**

**Ort:** Fakultät für Mathematik  
Oskar-Morgenstern-Platz 1  
Sky Lounge

Christian Krattenthaler, Michael Eichmair und Michael Schlosser