**Oberseminar "Wahrscheinlichkeitstheorie und Anwendungen"**

_Davide Giraudo (Uni Straßburg) \textit{“A deviation inequality for U-statistics and an application to convergence rates in the law of large numbers”}._

**Oberseminar "Arrangements and Symmetries"**

_Götz Pfeiffer (Galway), \textit{“Falling Powers and the Algebra of Descents”}._

Abstract: A finite Coxeter group of classical type A, B or D contains a chain of subgroups of the same type. We show that intersections of conjugates of these subgroups are again of the same type, and make precise in which sense and to what extent this property is exclusive to the classical types of Coxeter groups. As the main tool for the proof we use Solomon’s descent algebra. Using Stirling numbers, we express certain basis elements of the descent algebra as polynomials and derive explicit multiplication formulas for a commutative subalgebra of the descent algebra. This is joint work with Linus Hellebrandt.

**Oberseminar "Dynamische Systeme"**

_Erman Cineli (Paris), \textit{“Topological entropy and Floer theory”}._

Abstract: In this talk I will introduce barcode entropy and discuss its connections to topological entropy. The barcode entropy is a Floer-theoretic invariant of a compactly supported Hamiltonian diffeomorphism, measuring, roughly speaking, the exponential growth under iterations of the number of not-too-short bars in the barcode of the Floer complex. The topological entropy bounds from above the barcode entropy and, conversely, the barcode entropy is bounded from below by the topological...
entropy of any hyperbolic locally maximal invariant set. As a consequence, the two quantities are equal for Hamiltonian diffeomorphisms of closed surfaces. The talk is based on a joint work with Viktor Ginzburg and Basak Gurel.

**Oberseminar "Dynamische Systeme"

Jakob Hedicke (RUB) “On the global hyperbolicity of the positively elliptic region”

Abstract: It was recently observed by Abbondandolo, Benedetti and Polterovich, that the positive semi-definite symmetric matrices define a conjugation invariant closed cone structure on the linear symplectic group. We show that the open subset of positively elliptic symplectic matrices is globally hyperbolic.

**Bereits gelaufen:

Wissenschaftlicher Vortrag

Dr. Martin Kroll, “Nichtparametrische Statistik mit anonymisierten Daten”
Oberseminar Topologie

Scott Balchin “Equivariant commutativity, the Catalan numbers, and Quillen model structures.”

Abstract: Studying the concept of commutativity up to homotopy is already a difficult problem, however, with the introduction of a group structure the problem is drastically more complicated. Luckily, we shall see that in the case of a finite group, the possible options for equivariant homotopy commutativity can be encoded using simple combinatorics via objects called transfer systems.

Using this, we show that for cyclic groups of prime power order, this combinatorial problem retrieves the construction of the Catalan numbers. In a somewhat unexpected twist, we will go on to see how this classification aids in a further classification of all possible Quillen model structures on finite total orders.