

# Titles and Abstracts

## Geometry Day in Karlsruhe on 31.01.2023

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**Speaker:** Gabriele Link (KIT)

**Title:** Counting closed geodesics in non-positive curvature

**Abstract:** In this talk I will explain how to generalise results on the asymptotics of the number of closed geodesics on a negatively curved compact manifold to not necessarily compact rank one spaces. We will see that a key role is played by the orbit counting function of the action of the fundamental group on the universal covering. I will also discuss recent related results by Dang-Li and others for compact symmetric spaces of higher rank.

**Speaker:** Thomas Delzant (Université de Strasbourg)

**Title:** Group rings and hyperbolic geometry.

**Abstract:** In the 1950's, Cohn defined the notion of fir (free ideal ring) for a noncommutative ring and established the fact that the group algebra of a free group satisfies this property. Based on the geometric ideas of C. Hog-Angeloni and G. Avramidi, we will explain how to extend these results to certain hyperbolic groups.

**Speaker:** Slavyana Geninska (Université de Toulouse)

**Title:** Relative systoles of translation surfaces

**Abstract:** For a translation surface, we define the relative systole to be the length of the shortest saddle connection. In this talk, we will be interested in the maxima and the local maxima of the systole function on a stratum of area one translation surfaces. These questions are also related to the (locally) maximal number of shortest saddle connections.

**Speaker:** Christophe Pittet (Aix-Marseille Université)

**Title:** Asymptotic Schur orthogonality relations

**Abstract:** Schur orthogonality relations are useful tools in the theory of representations of compact groups. We will present some orthogonality relations for some unitary representations of non-compact semi-simple groups. This is a work in progress with Alexander Bendikov (University of Wrocław) and Adrien Boyer (Paris Cité).