WWU MÜNSTER

If people do not believe that mathematics is simple, it is only because they do not realize how complicate life is.

15. John von Neumann-Lecture

Arithmeticity of discrete groups

Prof. Dr. Yves Benoist (Université Paris-Sud)
Thursday, April 18, 2019, 4:30 p.m., Lecture hall M5

Yves Benoist is a French mathematician, known for his work on group dynamics on homogeneous spaces. In 2011 he received the Clay Research Award, in 2012 he gave the Takagi Lectures in Kyoto at the Research Institute for Mathematical Sciences (RIMS), and in 2014 he was an invited speaker at the ICM in Seoul.

In 1905, Minkowski proved that the discrete group SL(n,Z) is a lattice in the Lie group SL(n,R). This means that a fundamental domain has finite volume. More generally, by a theorem of Borel and Harish-Chandra, an arithmetic group in a simple Lie group is always a lattice. Conversely, by a celebrated theorem of Margulis, in a higher rank simple Lie group G any lattice is an arithmetic group. The aim of this lecture is to survey other arithmeticity criteria for discrete groups which are not assumed to be lattices. Generalizing work of Selberg and Hee Oh and solving with Miquel a conjecture of Margulis, we will see that a discrete subgroup in G is a non-cocompact arithmetic group if and only if it is Zariski dense and intersects cocompactly at least one horospherical subgroup U of G.

Tea and coffee will be served at 4 p.m. in SR0 (entrance of math high-rise)

After the lecture we cordially invite for a reception (foyer, Orleansring 12)

Organized by:
Prof. Dr. Joachim Cuntz,
Prof. Dr. Angela Stevens,
Prof. Dr. Dr. Katrin Tent,
Prof. Dr. Burkhard Wilking

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