Berlin Mathematics Research Center MATH+

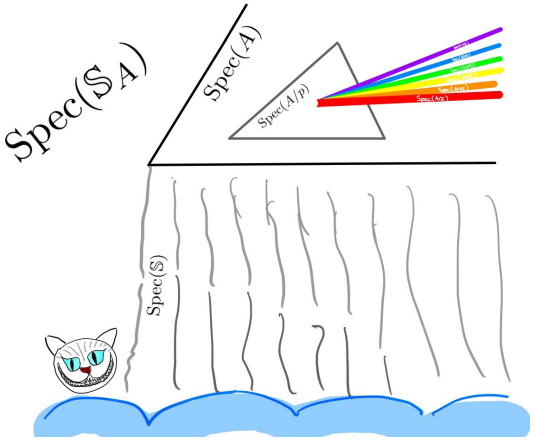
Berlin Mathematical School BMS

MATH+ Friday Colloquium

Friday 26 January 2024 at 14:15

FU Berlin, Computer Science Building, Room T9.028

Tea & Cookies starting at 13:00!



Thomas Nikolaus

(U Münster)

The K-Theory of Z/n

Higher algebraic K-Theory is an invariant of rings introduced by Quillen in the 1970s. Specifically, the K-groups K_n(R) for integers n are abelian groups associated with any ring R. They play a central role in various areas of pure mathematics, ranging from topology to algebraic geometry and arithmetic. Nikolaus will attempt to provide a gentle introduction to K-Theory, including definitions of low K-groups and some applications.

Despite their theoretical importance, the computation of K-Theory groups is very complicated. Nikolaus will indicate how modern tools (such as prismatic cohomology, p-adic Hodge theory, higher algebra) make it possible to tackle fundamental computations, such as K-Theory of finite rings, which have remained open since the 1970s.

Thomas Nikolaus has been professor of mathematics at the University of Münster since 2018. He obtained his PhD in 2011 at the University of Hamburg under the supervision of Christoph Schweigert. From 2011 to 2014, he completed his postdoctoral studies at the University of Regensburg before moving to Bonn for a non-permanent professorship until 2018. During this time, he embarked on several longer stays at the University of Berkeley. In 2022, he gave a talk at the International Congress of Mathematicians.