Berlin Mathematical School

BMS Friday 2018

Friday 15 June 2018

"Grothendieck 90"

BMS Loft, Urania, An der Urania 17, 10787 Berlin

14:15 Moritz Kerz (U Regensburg)

16:00 Carlos Simpson (U Nice)
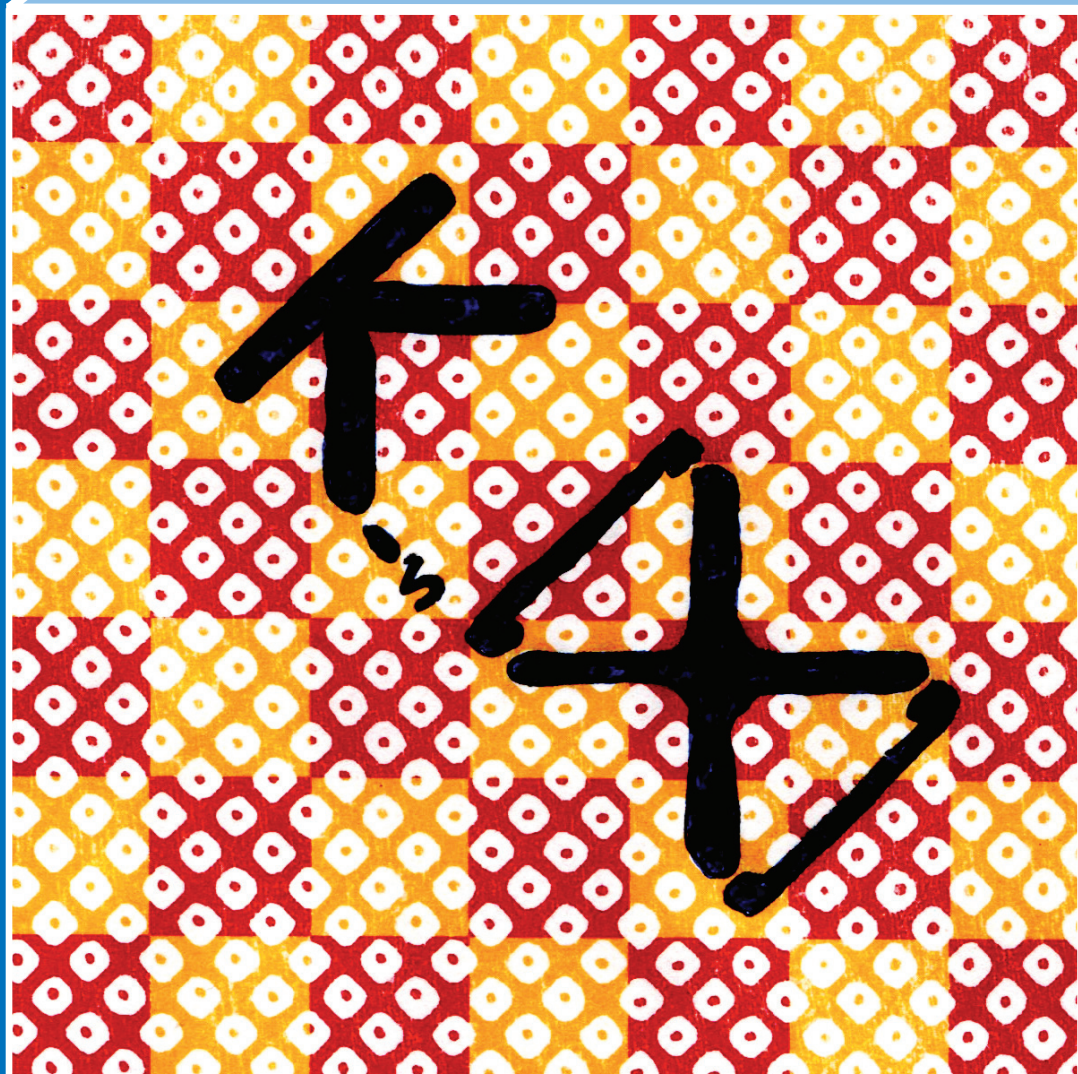
Moritz Kerz: Negative Algebraic *K*-theory

Negative algebraic *K*-theory was introduced by H. Bass in the 60s based on Grothendieck's K_0-group of algebraic vector bundles. In contrast to topological *K*-theory, these negative algebraic *K*-groups vanish for non-singular varieties and beyond the dimension of the variety (Weibel's conjecture) and, in particular, do not satisfy Bott periodicity. In his talk, Kerz will sketch the proof of Weibel's conjecture.

Moritz Kerz is a professor of mathematics at the University of Regensburg. His research interests are arithmetic geometry and algebraic *K*-theory. His awards include the Heinz Maier-Leibnitz Prize (2011) and the Carus Prize (2012).
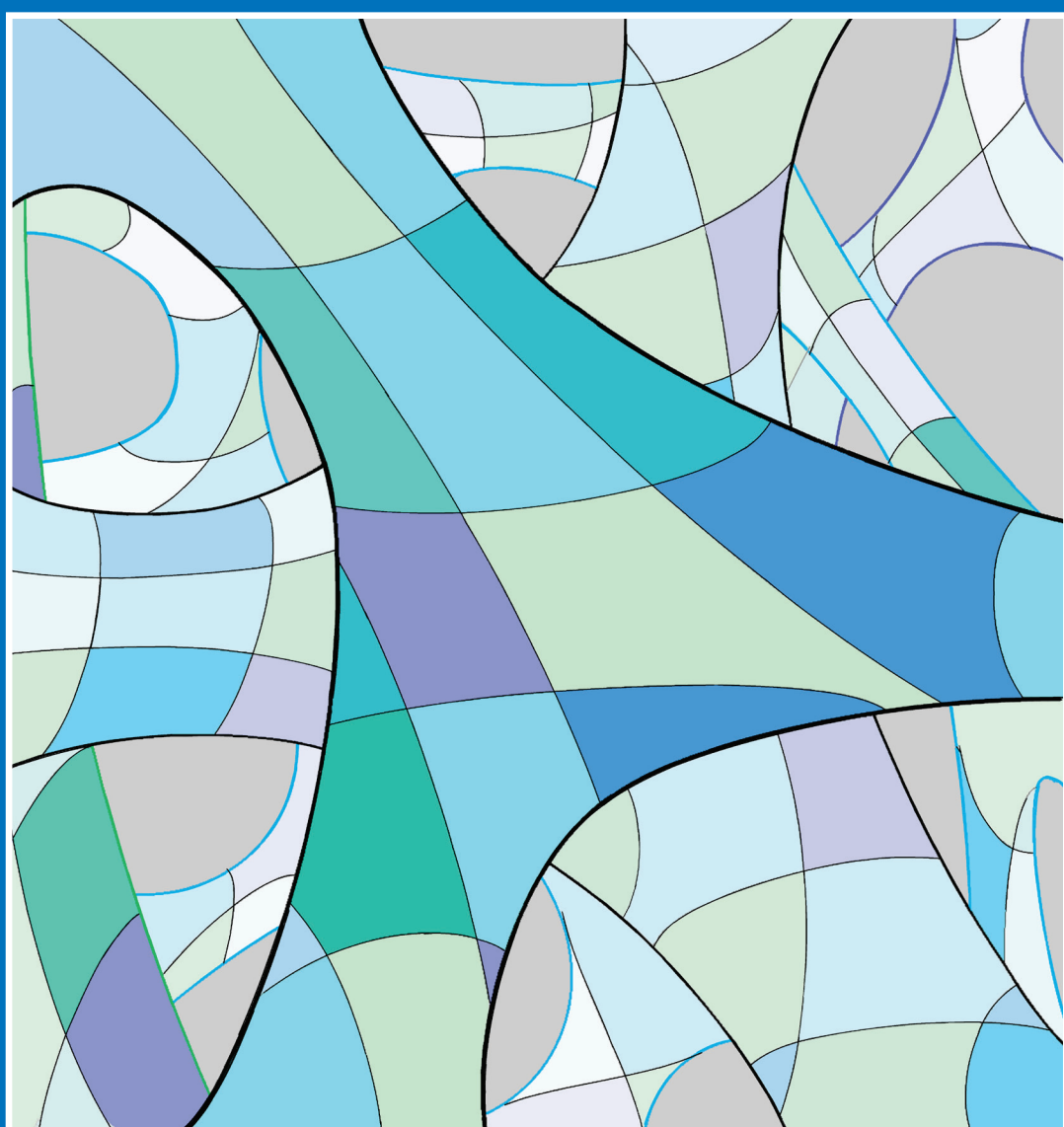
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Carlos Simpson: From the nonabelian Grothendieck period conjecture to the structure of surfaces uniformized by the ball

Grothendieck conjectured for the cohomology of a complex variety that doubly rational points in the Betti/de Rham realizations would be those coming from the theory of motives. A nonabelian version, for representations of the topological fundamental group, has seen important recent progress. In his talk, Simpson will look at what this has to say about algebraic surfaces with $c_1^2 = 3c_2$.

Carlos Simpson is a *Directeur de Recherche* (senior level at the CNRS - French National Center for Scientific Research) at the University of Nice and specializes in algebraic geometry. His awards include the Sophie Germain Prize (2015).

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