

Higher regulators of the ring of integers

Monday, 3 June 2024 10:00 (1 hour)

In keeping with the title of the conference, the first half of my talk will review the celebrated results of Borel, Minkowski, Quillen, and others on the rational K-theory of the integers, the stable cohomology of the general linear group, and the computation of the regulator in terms of odd zeta values.

The second half of the talk will cover very recent results due to many authors who have completely transformed our understanding of this field. If time permits, I plan to discuss some of the following topics: how the Borel regulator is related to certain motives of graphs constructed by Bloch, Esnault, and Kreimer; how to construct an algebraic incarnation of the Borel-Serre compactification of $GL_n(\mathbb{Z})$; why the cohomology of $GL_n(\mathbb{Z})$ has additional structures; and finally, why we expect iterated extensions of motives to appear in its unstable cohomology.

Presenter: BROWN, Francis (Oxford University)