SPIN STRUCTURES AND QUADRATIC ENHANCEMENTS ON NUMBER FIELDS

ARTANE SIAD

I will report on joint work in progress with Akshay Venkatesh where, motivated by anomalous class group statistics, we propose an arithmetic analogue of the topological story of quadratic enhancements associated with spin structures on oriented closed 2- and 3-manifolds: a choice of spin structure provides, respectively, a quadratic refinement of the mod 2 intersection form and of the linking pairing on the first torsion homology. Time permitting, I will attempt to clarify the sense in which our construction can be seen as a candidate determinant-of-cohomology for number fields.