

Speaker: Artane Siad

Title: Spin structures, quadratic maps, and the missing class group heuristic

Abstract: I will report on joint work in progress with Akshay Venkatesh, where we propose an arithmetic analogue of the association, in topology, of quadratic enhancements to spin structures on closed oriented 2- and 3-manifolds: a choice of spin structure gives, respectively, a quadratic refinement of the mod 2 intersection form and the linking pairing on the first torsion homology. This adds a line to the number field/3-manifold analogy of Mumford, Mazur, and Manin and leads to a conceptual clarification of various anomalous phenomena in the arithmetic statistics of class groups.