

Speaker: Daniel Martin

Title: Arithmetic on Markoff surfaces

Abstract: In this talk, we study the Markoff group action on solutions to the Markoff equation and its impact on questions in number theory and combinatorial group theory. The orbit structure of this action is predicted to be trivial outside of a few known exceptions by conjectures of Baragar, Bourgain–Gamburd–Sarnak, and McCullough–Wanderley, which have been verified in some case by work of Bourgain–Gamburd–Sarnak, Chen, and just recently, Kingsbury–Neuschotz. We will present alternative techniques that establish these conjectures in additional settings.