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**Speaker:** Ramin Takloo-Bighash  
University of Illinois, Chicago

Wednesday, March 8, 2017

3:00 PM

258 Hurley Hall

**Title:** Rational points on zero loci of Brauer elements

**Abstract:**

We consider the problem of counting the number of rational points of bounded height in the zero-loci of Brauer group elements on semi-simple algebraic groups over number fields. We obtain asymptotic formulae for the counting problem for wonderful compactifications using the spectral theory of automorphic forms. Applications include asymptotic formulae for the number of matrices over  $\mathbb{Q}$  whose determinant is a sum of two squares. These results provide a positive answer to some cases of a question of Serre concerning such counting problems. This is joint work with Daniel Loughran and Sho Tanimoto.