

Queen's Algebraic Geometry — Seminar —

CHARACTERIZATION OF ALGEBRAIC TORI IN ORTHOGONAL GROUPS OVER NUMBER FIELDS

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Abstract

The characterization of special cycles on Shimura varieties amounts to classifying the homomorphisms $f: H \rightarrow G$ where H and G are reductive groups over \mathbb{Q} (to which Shimura varieties can be associated) and f is a map over \mathbb{Q} (satisfying a certain technical condition). A classification of such maps is much simpler working over an algebraically closed field. This is (one of many potential) motivations for an interest in the following question: “Given $f': H' \rightarrow G'$ all defined over the algebraic closure of k (a number field), classify the maps $f: H \rightarrow G$ defined over k which become equivalent to f' after base change.” The problem in this generality is currently out of reach. In this talk, we shall briefly motivate the problem, then discuss results in the special case where $f': T' \rightarrow O'$ gives the embedding of a maximal torus into an orthogonal group. If time allows, we will discuss some ongoing work on other cases.

Monday 4 November 2013
16:30 – 17:30
319 Jeffery Hall