



Algebraic groups seminar

November 24 (Tuesday) 19:30, zoom ID 675-315-555

Alex Wertenheim (UCLA)

«Degree One Milnor K-Invariants of Groups of Multiplicative Type»

Many important algebraic objects can be viewed as G -torsors over a field F , where G is an algebraic group over F . For example, there is a natural bijection between F -isomorphism classes of central simple F -algebras of degree n and $\mathrm{PGL}_n(F)$ -torsors over $\mathrm{Spec}(F)$. Much as one may study principal bundles on a manifold via characteristic classes, one may likewise study G -torsors over a field via certain associated Galois cohomology classes. This principle is made precise by the notion of a cohomological invariant, which was first introduced by Serre.

In this talk, we will determine the cohomological invariants for algebraic groups of multiplicative type with values in $H^1(-, \mathbb{Q}/\mathbb{Z}(1))$. Our main technical analysis will center around a careful examination of μ_n -torsors over a smooth, connected, reductive algebraic group. Along the way, we will compute a related group of invariants for smooth, connected, reductive groups.

Everyone is welcome!