Philadelphia Area Number Theory Seminar

Sam Mundy
Princeton University

The nonvanishing of Selmer groups for certain symplectic Galois representations

Abstract: Given an automorphic representation π of $\mathrm{SO}(n, n+1)$ with certain nice properties at infinity, one can nowadays attach to π a p-adic Galois representation R of dimension $2n$. The Bloch–Kato conjectures then predict in particular that if the L-function of R vanishes at its central value, then the Selmer group attached to a particular twist of R is nontrivial.

I will explain work in progress proving the nonvanishing of these Selmer groups for such representations R, assuming the L-function of R vanishes to odd order at its central value. The proof constructs a nontrivial Selmer class using p-adic deformations of Eisenstein series attached to π, and I will highlight the key new input coming from local representation theory which allows us to check the Selmer conditions for this class at primes for which π is ramified.

Wednesday, April 12, 2023
2:00–4:00 PM

Temple University
Tuttleman Hall, Room **001A**

Informal refreshments at 2:00PM – Talk at 2:30PM