

Speaker: Romyar Sharifi

Title: Modular symbols and arithmetic

Abstract: The work of Ribet and Mazur-Wiles showed that the geometry of modular curves can be used to glean information on the structure of class groups of cyclotomic fields. I will present a conjectural refinement for their work to an explicit correspondence between modular symbols in the homology of a modular curve reduced modulo an Eisenstein ideal and Steinberg symbols of cyclotomic units in a K -group of an integer ring. I will explain the conjecture, the setting in which it arises, and what is known. In the final part of the talk, I expect to explain an analogous framework in the setting of global function fields that was explored in joint work with T. Fukaya and K. Kato.