

Speaker: Sug Woo Shin

Title: Cohomology of Shimura varieties of abelian type

Abstract: The ℓ -adic cohomology of Shimura varieties is of key importance in the Langlands program and other arithmetic applications. Langlands, Kottwitz, Rapoport, and others have developed a strategy to compute the cohomology by:

- (1) *parametrizing the points in the mod p fiber in group-theoretic terms at primes p of good reduction,*
- (2) *turning (1) into a formula for computing the cohomology via the Grothendieck-Lefschetz fixed point formula and other techniques.*

I will explain how this works in the modular curve case in the pre-talk. In the main talk I will recall Kisin's result on (1) and sketch the ideas for (2) in recent joint work of Kisin, Y. Zhu, and the speaker. Time permitting, a few applications may be discussed.