

Speaker: Mingjia Zhang

Title: Eichler–Shimura relations for abelian type Shimura varieties

Abstract: Shimura varieties are arithmetic modular varieties that generalize the familiar example of the modular curve. In particular, their cohomology groups carry both Hecke actions and Galois actions. In light of Langlands' philosophy, these actions should be related through reciprocity laws; it is hence desirable to gain a precise understanding of these actions. There are various approaches to this question, including trace formula methods due to Langlands–Kottwitz. Yet a more traditional approach is to relate the characteristic polynomials of Frobenii with the eigenvalues of Hecke operators, generalizing the Eichler–Shimura congruence relation for the modular curve. This provides less precise, but still a lot of information about the question in concern. I will explain results on Eichler–Shimura relations for abelian type Shimura varieties in joint work with Daniels, van Hoften and Kim.