A NEW PROOF OF THE EICHLER SHIMURA RELATION

Speaker: Pol van Hoften
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Time: Tue, Jan 14th, 09:00 - 10:00
Venue: Room 106, SCMS

Abstract:

Associated to a modular form f is a two-dimensional Galois representation whose Frobenius eigenvalues can be expressed in terms of the Fourier coefficients of f, using a formula known as the Eichler--Shimura congruence relation. This relation was proved by Eichler--Shimura and Deligne by analyzing the mod p (bad) reduction of the modular curve of level Gamma_0(p). In this talk, I will discuss joint work with Patrick Daniels, Dongryul Kim and Mingjia Zhang, where we give a new proof of this congruence relation that happens "entirely on the rigid generic fibre". More precisely, we prove a compatibility result between the cohomology of Shimura varieties of Hodge type and the Fargues--Scholze semisimple local Langlands correspondence, generalizing the Eichler--Shimura relation of Blasius--Rogawski. Our proof makes crucial use of the Igusa stacks that we construct, generalizing earlier work of Zhang in the PEL case.