Seminar/Talk

On the Ramanujan conjecture over function fields

Will Sawin
Columbia University

Host: Timothy Browning

Deligne proved the Ramanujan conjecture bounding the Hecke eigenvalues of modular forms by constructing two-dimensional Galois representations associated to them. The same strategy was used by Laurent Lafforgue to prove the Ramanujan conjecture for automorphic forms on GL_n over function fields as a corollary of his proof of the Langlands correspondence, building on ideas of Drinfeld who handled the GL_2 case. With Nicolas Templier, we have a different approach to proving the Ramanujan conjecture over function fields, based on estimating the trace of the Hecke operator on a whole family of automorphic forms at once. Our main tools are from geometry, but a different sort of geometry than the proofs of Drinfeld and Lafforgue - we use the moduli space of G-bundles, rather than the moduli space of shtukas. We can prove the conjecture under two conditions (one local condition and one assumption about cyclic base change).

Thursday, January 24, 2019 01:30pm - 03:30pm
Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

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