

BOSTON UNIVERSITY NUMBER THEORY SEMINAR

Pseudo-modularity on the ordinary eigencurve

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Tuesday, June 16 at 4:15 pm

111 Cummington Street, MCS B21

Tea and cookies in MCS 153 at 4:00 pm

Abstract: Hida theory says that any ordinary eigenform lies in a family of ordinary eigenforms with p -adically varying coefficients and weight. Sometimes, these families collide. We will discuss joint work with Preston Wake in which we investigate the collisions between the Eisenstein family and cuspidal families, showing that if we assume a mild condition on class groups, the collision is a plane singularity. We also determine when it is a simple normal crossing and draw consequences in Iwasawa theory, namely, new cases of Sharifi's conjecture. Time permitting, we will discuss the technique, which is to construct a deformation ring for ordinary Galois pseudorepresentations and compare this ring with the local ring on the eigencurve; in fact, we show they are isomorphic, a "pseudo-modularity" theorem.