

Basic locus of some Shimura varieties mod p and Tate Conjecture

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We give a global description of the basic locus of the special fiber of Shimura varieties of Hodge type when its dimension is exactly the half of the dimension of the Shimura variety. In this case, we show that the irreducible components contribute to all Tate classes of the middle degree cohomology under some genericity condition. The key input is the Geometric Satake isomorphism of Xinwen Zhu in mixed characteristic, and an argument similar to that of Vincent Lafforgue's proof of automorphic to Galois in geometric Langlands program. This is a joint work with Xinwen Zhu.