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Mod p representations of p -adic \tilde{SL}_2 via Hecke algebras

In characteristic 0, the genuine Iwahori Hecke algebra of \tilde{SL}_2 is isomorphic to the Iwahori Hecke algebra of the dual group PGL_2 , giving a correspondence of irreducible representations with Iwahori-fixed vectors. In contrast, we show that these two algebras are not isomorphic in characteristic p . However, the respective spherical mod p Hecke algebras are isomorphic, and after classifying the ordinary mod p representations of \tilde{SL}_2 , we show that this isomorphism gives a correspondence of unramified ordinary mod p representations.