

1037-11-232

Ian Kiming* (kiming@math.ku.dk), Dept. of Mathematics, University of Copenhagen, 2100 Copenhagen, Denmark. *On exceptional images of modular mod ℓ Galois representations.*

Given an eigenform f on some $\Gamma_1(N)$ and a prime ℓ it is a natural question to ask whether mod ℓ representation attached to f has an exceptional image of one of the types A_4 , S_4 , A_5 .

We show that there is an effective procedure for answering this question. Combined with certain global considerations, this is based a theorem that gives a parametrization of the possible Serre invariants of modular mod ℓ Galois representations of one of these exceptional types A_4 , S_4 , A_5 , purely in terms of local data attached to the fields cut out by the associated projective representations.

We explain the main theorem and illustrate with some numerical examples.

This is joint work with Helena Verrill. (Received February 04, 2008)