Speaker: S. J. Edixhoven

Title: Computational aspects of coefficients of modular forms

Abstract:

An overview will be given of the contents of the article math. NT/0605244 on arvix, in collaboration with Jean-Marc Couveignes, Robin de Jong, Franz Merkl, and Johan Bosman. In that article, it is shown, among other things, that the mod ℓ Galois representation associated to the discriminant modular form can be computed in time polynomial in ℓ. As a consequence, for p prime, Ramanujan's $\tau(p)$ can be computed in time polynomial in $\log p$.