Algebraic Geometry

Counts of points and cohomology of moduli spaces

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I will present an overview of an ongoing joint project together with Carel Faber and Gerard van der Geer in which we make concrete counts, using the computer, of points defined over finite fields on different moduli spaces of curves. Using the Lefschetz trace formula, these counts are used to form conjectures about the cohomology of local systems of the moduli spaces and to find information about the automorphic forms that appear there.

This is joint work with Carel Faber and Gerard van der Geer.