

Meeting: 1003, Atlanta, Georgia, SS 32A, AMS Special Session on Arithmetic Algebraic Geometry, I

1003-14-567 **Rachel Pries*** (pries@math.colostate.edu). *Deformation of curves with a wildly ramified group action and applications to error-correcting codes.*

We study deformations of a curve Y in characteristic p along with a wildly ramified action by a group G . The main result is a description of the moduli space parametrizing these deformations and a computation of its dimension. This dimension depends crucially on the ramification filtrations of the corresponding G -Galois cover. We describe an application of this result to the subject of error-correcting codes. Namely, we prove the existence of a finite number of curves of low genus with an action of a large automorphism group which cannot be deformed. It appears that these curves have some nice properties, including a large number of points and interesting Jacobians. (Received September 22, 2004)