1003-11-1044 **Glenn Stevens*** (`ghs@math.bu.edu`), Department of Mathematics, 111 Cummington Street, Boston, MA 02215, and **Avner Ash** and **David Pollack**. *p-Adic rigidity of arithmetic cohomology and associated Galois representations.*

We will describe a framework for constructing p-adic analytic families of p-ordinary arithmetic Hecke eigenclasses in the cohomology of congruence subgroups of GL(n,Q) where the Hecke eigenvalues vary p-adic analytically as functions of the weight. Such families correspond conjecturally to p-adic analytic families of three dimensional Galois representations. In particular, we will construct a p-adic rigid analytic space X and a family of Hecke eigenclasses over this space and show that this family is universal among all p-ordinary eigenclasses. We investigate the geometry of X with the goal of understanding the phenomenon of p-adic rigidity, i.e. the existence of points on X that are "isolated" up to twist. We conjecture that when n=3, a finite slope eigenclass is rigid if and only if it does not arise as the symmetric square lift of a classical modular form. Theoretical and numerical evidence for this conjecture will be presented. A generalization to arbitrary n will also be proposed. (Received October 03, 2004)