1035-14-89 **Ted C Chinburg*** (ted@math.upenn.edu), Dept. of Math, University of Pennsylvania, Philadelphia, PA 19104, and **Amy Ksir** (ksir@usna.edu), Mathematics Department, United States Naval Academy, Annapolis, MD 21402. *Actions of finite groups on modular forms and coherent sheaves.* Preliminary report.

Suppose G is a finite group of automorphisms of a modular curve X. The modular forms of a given even weight associated to X form a complex representation of G. This talk concerns whether the character of this representation takes rational values. More generally, we consider G-covers $\pi : X \to Y = X/G$ of smooth projective curves over a field of characteristic 0. We determine geometric conditions on π which are equivalent to the statement that for every coherent sheaf $\mathcal{F}$ on Y, the trace function of the G-equivariant Euler characteristic of $\pi^*\mathcal{F}$ takes only rational values. (Received July 19, 2007)