1012-55-197 **Mark Behrens*** (`mbehrens@math.mit.edu`), MIT Dept. of Mathematics, 2-273, 77 Massachusetts Ave, Cambridge, MA 02139. *$K(2)$-local homotopy and the building for $GL_2(\mathbb{Q}_\ell)$.*

I will talk about resolutions of topological modular forms which give the $K(2)$-local p-primary stable homotopy groups of spheres. These resolutions will be shown to arise from the structure of the building for $GL_2(\mathbb{Q}_\ell)$, for ℓ a well chosen prime distinct from p. Some of the results I will discuss are joint with Tyler Lawson. (Received September 20, 2005)