1128-11-10 **Jack Buttcane\*** (`buttcane@buffalo.edu`), Mathematics Department, 244 Mathematics Building, Buffalo, NY 14260. *Higher weight on GL(3).*

Classical automorphic forms are generally attached to subgroups of $\Gamma = SL(2, \mathbb{Z})$ and are functions on

$$\Gamma \backslash \mathbb{H} = \Gamma \backslash PSL(2, \mathbb{R})/SO(2, \mathbb{R}).$$

They come in two flavors: holomorphic modular forms and (spherical or weight 0) Maass forms. These two types of automorphic forms are both special cases of Maass forms with weight, and they collectively generate a basis of $L^2(\Gamma \backslash PSL(2, \mathbb{R}))$. The spherical Maass forms have been generalized to subgroups of $SL(n, \mathbb{Z})$, and these are currently a popular topic of study, particularly on $SL(3, \mathbb{Z})$. This talk will describe the generalization to Maass forms with weight on $SL(3, \mathbb{Z})$, the new types of non-spherical forms that arise, and what is currently known about them. (Received September 22, 2016)