1018-14-147   **Diane Maclagan*** (`maclagan@math.rutgers.edu`), Department of Mathematics, Rutgers University, Hill Center - Busch Campus, Piscataway, NJ 08904. *Gröbner bases arising in the McKay correspondence.*

The McKay correspondence describes a connection between the representation theory of a finite subgroup G of $SL(2, \mathbb{C})$ and the geometry of the minimal resolution of singularities of $\mathbb{C}^2/G$, via a directed graph known as the McKay quiver. When $G \subseteq SL(3, \mathbb{C})$ the moduli spaces of representations of the McKay quiver are crepant resolutions of $\mathbb{C}^3/G$. While these spaces are not smooth and irreducible for general finite $G \subseteq SL(n, \mathbb{C})$, they do have a distinguished irreducible component birational to $\mathbb{C}^n/G$. I will describe joint work with Alastair Craw and Rekha Thomas giving an explicit description of this component in the case G is abelian, including a Gröbner description of the quiver representations corresponding to each point. (Received March 03, 2006)