1007-14-180   **Alastair Craw**, **Diane Maclagan** and **Rekha Thomas*** (`thomas@math.washington.edu`),
Department of Mathematics, Box 354350, Seattle, WA 98195. *Polyhedral Geometry of McKay Quiver Representations for Abelian Groups.* Preliminary report.

We study the moduli spaces of McKay quiver representations of a finite abelian group $G \subset GL(n, k)$ with an eye toward explicit computations and algorithms via the theory of Gröbner bases and polyhedral geometry. The main result is an explicit construction of the coherent component of each moduli space as a toric variety. These coherent components are candidates for crepant resolutions of $\mathbb{C}^n/G$. Each coherent component is a GIT quotient of a universal toric variety and we interpret the GIT parameter space using polyhedral geometry. Nakamura's GHilb is a special instance of these GIT quotients. We provide an instance of a non-normal GHilb answering a question of Nakamura. (Received February 20, 2005)