1116-14-1953 **Ragnar-Olaf Buchweitz** and **Eleonore M Faber*** (emfaber@umich.edu), Department of Mathematics, 530 Church Street, Ann Arbor, MI 48109, and **Colin Ingalls**. *A McKay correspondence for reflection groups.* Preliminary report.

The classical McKay correspondence relates the geometry of so-called Kleinian surface singularities with the representation theory of finite subgroups of $SL(2, C)$. There is also an algebraic version of the correspondence, initiated by M. Auslander: let G be a finite subgroup of $SL(2, K)$ for a field K whose characteristic does not divide the order of G. The group acts linearly on the polynomial ring $S = K[x, y]$ and then the so-called skew group algebra $A = G * S$ can be seen as an incarnation of the correspondence.

We want to establish an analogous result when G in $GL(n, K)$ is a finite group generated by reflections, assuming that the characteristic of K does not divide the order of the group. Therefore we consider again the skew group algebra $A = G * S$, where S is the polynomial ring in n variables, and its quotient A/AeA, where e is the idempotent in A corresponding to the trivial representation. With D the coordinate ring of the discriminant of the group action on S, we show that the ring A/AeA is the endomorphism ring of the direct image of the coordinate ring of the associated hyperplane arrangement.

In this way one obtains a noncommutative resolution of singularities of that discriminant, a hypersurface that is singular in codimension one. (Received September 21, 2015)