CHRISTOPHER BRAV, University of Toronto
The projective McKay correspondence

Kirillov has described a geometric McKay correspondence for finite subgroups $G \subset \mathrm{PSL}_2(\mathbb{C})$: for each 'height function' on the affine Dynkin diagram associated to G, there is a derived equivalence from G-equivariant sheaves on $\mathbb{P}^1$ to the path algebra of an orientation of the diagram. These equivalences for various height functions are related by reflection functors.

I develop an analogous McKay correspondence for the cotangent bundle $T^*\mathbb{P}^1$ in which each height function gives a derived equivalence from equivariant sheaves on $T^*\mathbb{P}^1$ to the preprojective algebra of the affine Dynkin diagram. These various equivalences are related by so-called spherical twists, which generate an action of the Artin group of the diagram on the derived category of equivariant sheaves.