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McKay correspondence for reflection groups and derived categories

The classical McKay correspondence shows that there is a bijection between irreducible representations of finite subgroups G of $\mathrm{SL}(2, \mathbb{C})$ and the exceptional divisors of the minimal resolution of the singularity $\mathbb{C}^2/G$. This is a very elegant correspondence, but it's not at all obvious how to extend these ideas to other finite groups.

Kapranov and Vasserot, and then, later, Bridgeland, King and Reid showed this correspondence can be recast and extended as an equivalence of derived categories of coherent sheaves. When this framework is extended to finite subgroups of $\mathrm{GL}(2, \mathbb{C})$ generated by reflections, the equivalence of categories becomes a semiorthogonal decomposition whose components are, conjecturally, in bijection with irreducible representations of G . This correspondence has been verified in recent work of Potter and of Capellan for a particular embedding of the dihedral groups D_n in $\mathrm{GL}(2, \mathbb{C})$. I will discuss recent joint work verifying this decomposition in further cases.