Abstract:

In this talk, I will discuss McKay graphs and some recent results on the possible shapes of McKay graphs, joint with A. Aizenbud.

Given a finite group $G$ and its representation $\rho$, the corresponding McKay graph is a (directed) graph $\Gamma(G,\rho)$ whose vertices are the irreducible representations of $G$; the number of edges between two vertices $\pi,\tau$ of $\Gamma(G,\rho)$ is the multiplicity $[\pi \otimes \rho : \tau]$. Such graphs can be seen as a combinatorial tool to encode (part) of the data of the character ring of $G$.

In my talk, I will give some background on these graphs and some of their uses, and then present our recent results on classification of McKay graphs in the shape of (unoriented) trees.