

“I hope that I have been able to indicate that there is much more to be discovered about finite groups and their relation with other areas of mathematics. If this approach is to be successful, its merit will lie in its unifying power and its elegance. Would not the Greeks appreciate the result that the simple Lie algebras may be derived from the Platonic solids?” —John McKay, “Graphs, singularities and finite groups”

The Trivial Notions Seminar Proudly Announces

Du Val singularities and McKay correspondence

A talk by
Ruifang Song

Abstract

Du Val singularities are an important class of singularities in the classification of algebraic surfaces and threefolds. I will give their classification and different characterizations: as canonical surface singularities, as quotient singularities \mathbb{C}^2/G , where $G \in \mathrm{SL}(2, \mathbb{C})$ is a finite subgroup, and as hypersurface singularities in \mathbb{C}^3 defined by a list of simple polynomials. The configurations of exceptional curves obtained in a minimal resolution of such singularities correspond to ADE Dynkin diagrams which also arise in the representation theory of finite groups and classification of simple Lie algebras. If time permits, I may talk about how to resolve Du Val singularities using certain Hilbert scheme of points.

Thursday, March 13th, 2008 at 3:07 pm
Science Center 232