1062-14-159   **Kavita Sutar*** (`sutar.k@husky.neu.edu`), Department of Mathematics, Northeastern University, 360 Huntington Avenue, Boston, MA 02115. *Resolutions of defining ideals of orbit closures.*

The representation theory of quivers developed as a tool to understand the representations of finite-dimensional algebras. There is an interesting geometric aspect to representations of quivers which can be studied by applying tools from geometric invariant theory. The result is an intersection of flavors from representation theory, algebraic geometry, invariant theory and combinatorics.

For Dynkin quiver Q of finite representation type, we look at representation space of Q of fixed dimension vector (call it $Rep(Q, d)$), this is a vector space with an affine structure. There is a natural action of the group $Gl(d)$ whose corresponding orbit closures form an affine variety. For the class of orbit closures having a 1-step desingularization (as prescribed by Reineke), we find a resolution of the defining ideal of the orbit closures and give the minimal generators of this ideal . We classify the cases in which the coordinate ring is Gorenstein.

I will give a brief overview of the main tools used in above calculations and the results obtained so far. This is part of my thesis work under the supervision of my advisor, Prof. Jerzy Weyman. (Received August 05, 2010)