

Abstract

Through the Ringel-Hall algebra approach, one can construct quantum groups from some abelian categories, and construct Kac-Moody Lie algebras and some elliptic Lie algebras from the derived categories of some finite dimensional associative algebras. In this talk, the constructions of Hall algebras of some triangulated categories via derived Hall algebras for derived categories will be presented and the relations between them will be characterized. As an application, some connections between Hall algebras and quantum cluster algebra will be addressed.