Abstract

In this thesis we investigate the category of finite-dimensional modules over an EI-category algebra. More precisely, we analyze the representation type for this class of algebras in the first part. It will be shown that a representation-finite EI-category is an amalgam of a representation-finite poset and a collection of representation-finite groups. We will then see that the representation type depends on the characteristic of the ground field. Furthermore, we give a necessary criterion for an EI-category with two objects to be representation-finite. Under additional assumptions on the automorphism groups of the objects we give a full classification of the representation-finite EI-categories with two objects. In the second part we present a new proof for the existence of an upper bound for the finitistic dimension of an EI-category algebra. Inspired by this proof we define a new class of algebras, which we call *algebras with a directed stratification*. We prove a result on the finitistic dimension of these algebras. This reduces the finitistic dimension conjecture to a class of algebras which we can describe combinatorially in terms of their Gabriel-quiver.