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Artin–Schelter regular algebras and categories

Having in mind non connected algebras, like the preprojective algebra, we introduce a generalization of the notion of a noncommutative regular algebra given by Artin and Schelter, we obtain some basic results and apply them to the the polynomial algebra. In order to include the category of finitely presented functors from the finitely generated modules over a finite dimensional K-algebra, to the category of K-vector spaces, we extend the notion of Artin Schelter regular to additive categories. Finally, we give an application to the structure of the Auslander Reiten components.

The results presented here are part of a joint work with Oeyvind Solberg.