Substructures of Algebras with Weakly non-Negative Tits Form

J.A. de la Peña, A. Skowroński

Institute of Mathematics, U.N.A.M., Circuito Exterior
Ciudad Universitaria 04510, México, D.F. México, jap@matem.unam.mx

Faculty of Mathematics and Computer Science, Nicolaus Copernicus University
Chopina 12/18, 87-100, Toruń, Poland, skowron@mat.uni.torun.pl

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Abstract: Let \( A = kQ/I \) be a finite dimensional basic algebra over an algebraically closed field \( k \) presented by its quiver \( Q \) with relations \( I \). A fundamental problem in the representation theory of algebras is to decide whether or not \( A \) is of tame or wild type. In this paper we consider triangular algebras \( A \) whose quiver \( Q \) has no oriented paths. We say that \( A \) is essentially sincere if there is an indecomposable (finite dimensional) \( A \)-module whose support contains all extreme vertices of \( Q \). We prove that if \( A \) is an essentially sincere strongly simply connected algebra with weakly non-negative Tits form and not accepting a convex subcategory which is either representation-infinite tilted algebra of type \( \tilde{E}_6 \) or a tubular algebra, then \( A \) is of polynomial growth (hence of tame type).

Key words: tame representation type, essentially sincere module, Tits form, strongly simply connected algebra.

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REFERENCES


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