Mathematics > Representation Theory

Stratifications of derived categories from tilting modules over tame hereditary algebras

Hongxing Chen, Changchang Xi

(Submitted on 3 Jul 2011)

n this paper, we consider the endomorphism algebras of infinitely generated tilting modules of the form $R_{\mathcal U}\oplus R_{\mathcal U}/R$ over tame hereditary k-algebras R with k an arbitrary field, where $R_{\mathcal{U}}$ is the universal localization of R at an arbitrary set $\mathcal{U}$ of simple regular R-modules, and show that the derived module category of $\End_R(R_{\mathcal U}\oplus R_{\mathcal U}/R)$ is a recollement of the derived module category $\D{R}$ of R and the derived module category $\D{{\mathbb A}_{\mathcal{U}}}$ of the ad\`ele ring ${\mathbb A}_{\mathcal{U}}$ associated with $\mathcal{U}$. When k is an algebraically closed field, the ring ${\mathbb A}_{\mathcal{U}}$ can be precisely described in terms of Laurent power series ring $k((x))$ over k. Moreover, if $\mathcal U$ is a union of finitely many cliques, we give two different stratifications of the derived category of $\End_R(R_{\mathcal U}\oplus R_{\mathcal U}/R)$ by derived categories of rings, such that the two stratifications are of different finite lengths.

Comments:	28 pages
Subjects:	**Representation Theory (math.RT)**; Rings and Algebras (math.RA)
Cite as:	**arXiv:1107.0444 [math.RT]**
	(or **arXiv:1107.0444v1 [math.RT]** for this version)

Submission history

From: Changchang Xi [view email]
[v1] Sun, 3 Jul 2011 10:25:10 GMT (35kb)

Which authors of this paper are endorsers?