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Cody Holdaway* (codyh3@math.washington.edu). *Equivalences of categories involving graded modules over path algebras of finite GK-dimension.*

Let k be a field, Q a finite quiver and kQ the path algebra of Q . Give kQ the natural grading where the arrows have degree 1 and let $\text{QGr } kQ$ denote the category of graded right modules modulo the torsion modules. Given two quivers Q and Q' , when is $\text{QGr } kQ \cong \text{QGr } kQ'$? When the path algebras have finite GK-dimension, there is an invariant which answers this question completely. The invariant takes the form of a finite quiver, denoted $E(Q)$, which is determined by the simple objects of the category $\text{QGr } kQ$ and their extensions. Luckily, the quiver $E(Q)$ can be read from the quiver Q rather easily. The main theorem states that $\text{QGr } kQ \cong \text{QGr } kQ'$ if and only if $E(Q) = E(Q')$. (Received September 03, 2014)