Summary: We give a criterion for the existence of noncommutative crepant resolutions (NCCRs) for certain toric singularities. In particular, we recover N. Broomhead’s result [Dimer models and Calabi-Yau algebras. Providence, RI: American Mathematical Society (AMS) (2012; Zbl 1237.14002)] that a three-dimensional toric Gorenstein singularity has an NCCR. Our result also yields the existence of an NCCR for a four-dimensional toric Gorenstein singularity, which is known to have no toric NCCR.


MSC:

14A22 Noncommutative algebraic geometry
14E15 Global theory and resolution of singularities (algebro-geometric aspects)
14B05 Singularities in algebraic geometry
14M25 Toric varieties, Newton polyhedra, Okounkov bodies

Full Text: DOI