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Failure of coherence for higher preprojective algebras

Given a finite acyclic quiver Q , it is well-known that the representation type of Q is characterised by the growth properties of the preprojective algebra $\Pi(Q)$. More precisely, $\Pi(Q)$ is finite dimensional for Q Dynkin, Noetherian for Q Euclidean and non-Noetherian otherwise. In that last case, the graded algebra $\Pi(Q)$ is at least known to be coherent, a fact much exploited in Minamoto's geometric point of view.

In higher global dimension, for a d -representation infinite algebra Λ one can ask whether its $(d+1)$ -preprojective algebra $\Pi(\Lambda)$ is always coherent. This question has natural interpretations in terms of higher Auslander-Reiten theory. We will show that coherence can fail for any $d \geq 3$, although the counterexamples are somehow isolated and do not seem representative of typical behavior.