RECOLLEMENTS FROM PARTIAL TILTING COMPLEXES

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Abstract. From [DG], [Mi] and [J] it is known that every compact object $Q$ of the derived category $D(B)$ of a dg-algebra gives rise to a recollement of triangulated categories of the form

\[
\begin{array}{ccc}
Q^- & \xrightarrow{i^*} & D(B) \xleftarrow{\mathbb{R}Hom_B(Q,-)} \mathbb{R}hom_B(P,-) \\
\mathbb{R}hom_B(P,-) & \xrightarrow{i_*=i_{inc}} & D(D)
\end{array}
\]

with $P = \mathbb{R}hom_B(Q,B)$.

Following [NS] we show that the left hand term of the recollement above is equivalent to the derived category of a dg algebra $C$ linked to $B$ by a homological epimorphism and we study the TTF triple associated to the recollement. A particular case of $(\ast)$ gives a generalization of the Morita-type theorem proved by Rickard in [R].

As an application we obtain the same result as in [BMT] but with much weaker assumptions. Moreover, our setting generalizes to the case of infinitely generated $n$-tilting modules, the results proved recently by [CX] for 1-tilting modules. Finally we characterize when the left hand term of $(\ast)$ is exactly a ring, introducing the concept of “generalized universal localization”.

References


