

Reduction for negative Calabi-Yau triangulated categories

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In recent years there has been much interest in Calabi-Yau (CY) triangulated categories with positive CY "dimension", particularly in the setting of cluster-tilting theory. One key aspect of the theory is Iyama and Yoshino's CY reduction technique, which has important applications in the construction of cluster-tilting objects, which may be regarded as positive CY configurations. However, there has been little systematic study of CY triangulated categories with negative CY "dimension" despite there being many naturally occurring examples, such as certain stable module categories. Unfortunately, Iyama and Yoshino's CY reduction technique is not compatible with negative CY configurations. In this talk, we develop a reduction technique that works for negative CY triangulated categories and provides an inductive way to construct negative CY configurations in such categories.

This is joint work with Raquel Coelho Simoes.