

Seminar

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t-structures on triangulated categories with geometric exceptional collections

Tuesday, May 9, 2017

at 15:30 h

ESI, Boltzmann Lecture Hall

Abstract: We will discuss the question stated by Bondal and Polishchuk about existence of "geometric" t-structures on triangulated categories with sufficiently nice exceptional collections. The definition of this conjectural t-structure immitates the reconstruction of the geometric t-structure on $D^b(\hat{P}\hat{n})$ from the algebraic t-structure given by Beilinson's exceptional collection: an object F is in the heart of the geometric t-structure iff for sufficiently large n it's twists $F(n)$ are in the heart of the algebraic t-structure.

In the general situation the question turns out to be very difficult. We will reduce it to the vanishing of higher Ext's from a certain infinite-dimensional module (over the corresponding directed quiver) to itself. We will also consider the (unresolved) special case of the tensor product of two (generalized) Kronecker quivers, and reduce the question to a statement about the sets of Harder-Narasimhan slopes of certain sequences of finite-dimensional Kronecker representations.

L. Katzarkov

May 8, 2017