CASTS TALKS

CASTS Algebraic Geometry Summer Program

Derived category of coherent sheaves

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2018 - 07 - 18 (Wed.)
11:30 - 12:30
103, Mathematics Research Center Building (ori. New Math. Bldg.)

This talk is a bit of introductory. We will apply some general techniques on the bounded derived categories of coherent sheaves (or more generally, those of quasi-coherent sheaves since there is almost no injective coherent sheaves) on Noetherian schemes (in particular, on projective varieties). Our goal here is to characterize two most common spanning classes of these categories, i.e. skyscraper sheaves of closed points and powers of an ample line bundle, and to introduce a generalization of Serre duality, Grothendieck-Verdier duality.

On the other hand, we may take a peek at some examples of derived functors which will be used repeatedly in the sequel, inclusive of cohomology, direct image, local homs, dual, tensor product, compatibilities.

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