Kontsevich, Maxim

Geometry in dg-categories. (English) Zbl 07425824

Anel, Mathieu (ed.) et al., New spaces in mathematics. Formal and conceptual reflections. Cambridge: Cambridge University Press. 554-592 (2021)

Derived noncommutative geometry attempts to interpret a general triangulated category *without* the symmetric monoidal structure as the category of quasi-coherent sheaves on a noncommutative space. The principal objective in this paper is to review noncommutative analogues of many notions from the commutative geometry and also to show several genuinely new noncommutative phenomena. Homological mirror symmetry was the main source of inspiration to the author.

The table of contents goes as follows.

A1 dg-Categories and Semifree Modules

A2 Triangulated dg-Categories

A3 Resolutions and Tensor Products

A4 Compact Objects

A5 A_∞-Language

For the entire collection see [Zbl 1466.53002].

Reviewer: Hirokazu Nishimura (Tsukuba)

MSC:

18G35 Chain complexes (category-theoretic aspects), dg categories

Full Text: Link