

CATEGORIES IN GEOMETRY AND PHYSICS: MIRROR SYMMETRY, D-BRANES AND LANDAU-GINZBURG MODELS

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Triangulated and derived categories naturally appear in different fields of mathematics: algebra, geometry, topology and etc. Recently, they have gained importance in such branch of physics as string theory, where these categories appear as categories of supersymmetric D-branes in sigma-models and Landau-Ginzburg models. Triangulated categories are natural and powerful invariants of the corresponding geometrical structures, allowing to compare seemingly incomparable objects from different fields of mathematics and physics. The talk will be an attempt on the one hand to make some review, and on the other hand - to introduce new, having natural applications to geometry and physics results from the theory of triangulated and derived categories.