

Quantization in Representation Theory, Derived Algebraic Geometry, and Gauge Theory



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The non-commutative AKSZ construction

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We can construct oriented topological extended field theories using the AKSZ construction in derived algebraic geometry. This was first suggested by Pantev-Toen-Vaqui-Vezzosi and accomplished by Calaque-Hausend-Scheimbaur. The AKSZ construction is a version of the classical AKSZ field theories in physics. In [CHS] it is given as a symmetric monoidal functor from a higher category of oriented stacks to a higher category of symplectic stacks. We will give a non-commutative version of this construction, which associates to every finite dg category a symmetric monoidal functor with target a higher category of n -Calabi-Yau categories, refining the commutative version of the AKSZ construction.

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