

Cohomological Hall algebras and line operators

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We construct, from a general quiver with potential, a triangulated monoidal category, which we call the category of lines. In the case of ADE Dynkin quiver, we establish a monoidal equivalence between the construction above and the category of BPS line operators in 4d, $N=2$ pure gauge theory, constructed by Braverman, Finkelberg, and Nakajima, further developed by Cautis and Williams. Finally, we discuss gauge theories with matters. This talk is based on ongoing joint work with Ryo Fujita, Yan Soibelman, and Gufang Zhao.