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Lev Rozansky*, rozansky@math.unc.edu. *Link Homology and Symplectic Geometry.*

This is a review of my joint work with A. Oblomkov. Quantum field theory considerations suggest that one can associate a 2-category to a symplectic variety. This 2-category is particularly well understood if the variety is a hamiltonian reduction of a cotangent bundle. We consider a special object FL in the 2-category associated with the Hilbert scheme of points in \mathbb{C}^2 and construct a homomorphism from the braid group to the monoidal category $\text{End}(\text{FL})$ which is a particular category of matrix factorizations. This homomorphism leads to yet another construction of the HOMFLY-PT link homology. The ‘microscopic’ view of the structure of the homomorphism is very similar to the pictures used by Khovanov-Lauda and others in categorifying Lie algebras, but at the next category level. (Received September 22, 2021)