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Title: The Heisenberg category of a category

Abstract: The Heisenberg algebra associated with a lattice is a much investigated object originating in quantum theory. Khovanov introduced recently a categorification of the infinite Heisenberg algebra associated with the free boson or, equivalently, a rank 1 lattice, using a graphical construction involving planar diagrams. We extend Khovanov's graphical construction to derived categories of smooth and projective varieties or, more generally, to categories having a Serre functor. In our case the underlying lattice will be the (numerical) Grothendieck group of the category. We also obtain a 2-representation of our Heisenberg category on a categorical analogue of the Fock space. Joint work with Clemens Koppensteiner and Timothy Logvinenko.