

Categorical action of the braid group of the annulus

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The usual braid group is an ubiquitous object in mathematics due to its various possible definitions: diagrammatic presentation, mapping class group, fundamental group of configuration space... Using all these points of view Khovanov and Seidel constructed a faithful categorical action of the braid group. The usual braid group is also called the Artin group of type A. Among all other Artin groups of finite type the one that shares very similar various possible definitions is the Artin group of type B. Using a similar approach to Khovanov-Seidel, we construct a categorical action of the Artin group of type B which is a categorification of a natural homological representation. This a joint work with A. Gadbled and A-L. Thiel.