CIRCULAR LEAVES FOR THE DIAGRAMMATIC HECKE CATEGORY

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Abstract:
The diagrammatic Hecke category is a diagrammatic version of the category of Soergel bimodules, which categorifies the Hecke algebra. All of its morphisms are described by a small number of generators and relations, and a basis of every Hom space is known: Libedinsky's double leaves. However, so far there is no implementation on a computer. We present new work that makes such an implementation possible. Concretely, we introduce rewriting for Soergel diagrams. The question is, if there is an algorithm that turns any morphisms into a linear combination of morphisms in a certain normal form. These normal forms for any word w in the Coxeter group we call the circular leaves of w. We conjecture that there are in a 1:1 correspondence with double leaves and that they also form a basis of the Homspace.