

The Intrinsic Geometry of the Dual Braid Complex

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The braid groups have a standard presentation and a dual presentation and there are classifying spaces associated to each. The classifying space for the standard presentation is an example of a Salvetti complex and the one for the dual presentation is what I am calling the dual braid complex. The dual braid complex is a simplicial complex with a piecewise euclidean metric that has many nice properties—including being CAT(0) (this is known to be true in low dimensions and strongly conjectured in all dimensions)—but it is extremely large. In this talk I will introduce a drastically simplified cell structure on the dual braid group derived from the intrinsic geometry of the dual braid complex and discuss the facts that become visible in this less cluttered context.

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