

Wheels and Wheeling

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We construct and prove a diagrammatic analogue of the Duflo isomorphism. Our version is an algebra isomorphism between the spaces \mathcal{A} of chord diagrams and \mathcal{B} of symmetrized chord diagrams. With this isomorphism, we can compute the Kontsevich integral of the unknot and the Hopf link to all orders.

The central topological fact we use can be summarized by the catch phrase "1+1=2": a connected sum of two Hopf links ("1+1") is the same as a single Hopf link with one component doubled ("2").