

Groups, Discs and Cacti

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The "framed little discs operad" is a topological gadget that acts on the double loop space of any based space X . The "cactus operad" is a gadget of the same kind, which this time (almost) acts on the free loops in a manifold M . The two operads are known to be homotopy equivalent.

The talk will begin by explaining what operads are, and will then elaborate on the relationship between cacti and framed discs. First we will introduce a new action of cacti on the space of based loops in a topological group, and then we will show that it is equivalent to the action of framed discs on double loop spaces. Along the way we will give a new equivalence between cacti and framed discs.