

1106-VR-2287      **Jason Marshall Lucas\*** ([lucas11@math.purdue.edu](mailto:lucas11@math.purdue.edu)), Purdue University, Department of Mathematics, 150 N. University Street, West Lafayette, IN 47906. *Models for Configuration Spaces and their Relations.*

Classically, configuration spaces have been of great interest. A basic example is the configuration space of  $n$  points in the plane. Such spaces arise naturally in many contexts. If one thickens the points being considered to discs, one is quickly lead to a composition of configurations via insertion. This type of insertion operation is a prime example of the general structure of an operad. The particular operad at hand is called the little discs and is important in the study of loop spaces, and more recently in Deligne's Conjecture and deformation quantization.

The model of little discs is not unique however, and there are other models that are homotopic to it. On one hand these other models may serve the same purpose, but on the other hand due to their structure they are better suited for certain applications. A general operad of this type is called an  $E_2$ -operad and its generalizations to thickened points in  $k$  dimensions an  $E_k$ -operad.

We will review the general setup and establish new relations between certain  $E_k$ -operads. (Received September 16, 2014)