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Rebecca Ann Hillman* (hillmanr@uscsumter.edu), University of South Carolina Sumter, 200 Miller Road, Sumter, SC 29150-2498. *Symmetric Brace Algebras and A_∞ Structures*. Preliminary report.

In this talk, we will review the definition of a *symmetric brace algebra* and look at a few examples of the calculations used in the symmetric brace algebra relations. We will then show how this can be expanded to A_∞ structures by using symmetric brace algebras in diagrams such as a line segment for 3 variables, a pentagon for 4 variables, and the associahedron K_5 for 5 variables. (Received September 28, 2005)