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Weiqing Gu* (gu@math.hmc.edu), 1250 N. Dartmouth Ave, Math Department, Harvey Mudd College, Claremont, CA 91711. *Calibrated Exceptional Geometry*.

In this talk, first we will quickly review the background of exceptional geometry and the method of calibrations as an effective tool for identifying volume-minimizing cycles in Riemannian manifolds such as Grassmann manifolds, Calabi-Yau 4-folds and exceptional holonomy manifolds. Then we will determine several families of so-called associative, coassociative, and Cayley cycles in G_2 and $Spin_7$ manifolds. Those cycles are supersymmetric cycles in string theory. (Received February 22, 2005)