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Sema Salur* (sema.salur@rochester.edu), UR Mathematics 915 Hylan Building, University of Rochester RC Box 270138, Rochester, NY 14627. *Manifolds with special holonomy and applications*. Preliminary report.

Examples of n -dimensional Ricci flat manifolds are Riemannian manifolds whose holonomy groups $\text{Hol}(g)$ are subgroups of $\text{SU}(n)$, for $n=2m$, and subgroups of the exceptional Lie group G_2 , for $n=7$. We call them Calabi-Yau and G_2 manifolds, respectively. They are also examples of manifolds with special holonomy. Calibrated submanifolds of Calabi-Yau and G_2 manifolds are volume minimizing in their homology classes and their moduli spaces have many important applications in geometry, topology and physics. In this talk we give a report of recent research on the calibrations inside the manifolds with special holonomy. (Received January 31, 2016)