1016-53-264 **Selman Akbulut*** (akbulut@math.msu.edu), Dept of Math, Michigan State University, E.Lansing, MI 48824, and **Sema Salur** (salur@math.northwestern.edu), Dept of Math, Northwestern University, Chicago, IL. *Associative submanifolds of a G2 Manifold.*

The deformation space of an associative submanifold $Y^3$of a G_2 manifold (M^7, φ) becomes smooth after perturbing it by natural parameters; this corresponds to either allowing φ to vary, or allowing Y to move through pseudo-associative submanifolds (Y's where a fixed rotation makes TY associative). Both cases are related by the gauge group of the bundle $T(M) \to M$. By this one can associate invariants to Y and (M, φ) by using gauge theories.

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