1020-53-3   **Jon G Wolfson*** (`wolfson@math.msu.edu`), Department of Mathematics, Michigan State University, East Lansing, MI 48824. *Lagrangian Submanifolds and Volume.*

Symplectic manifolds have a distinguished class of submanifolds, the lagrangian submanifolds, and distinguished homology classes, the lagrangian homology. In this talk we discuss a variational procedure to find canonical representatives of the lagrangian homology. The variational problem seeks volume minimizers, or more generally, extrema, among the set of lagrangian submanifolds that represent a lagrangian homology class. This problem is now well understood in dimension two, though largely unexplored in higher dimensions.

We will also discuss connections with questions in mirror symmetry (the SYZ conjecture), mean curvature flow and other topics in geometry. (Received August 17, 2006)