1096-35-207 **Jean Dolbeault**, **Maria J. Esteban** and **Michael Loss*** (loss@math.gatech.edu), School of Mathematics, Georgia Tech, 686 Cherry Street, Atlanta, GA 30332-0160. *Nonlinear flows and rigidity results on compact manifolds.*

This talk is about a certain class of non-linear PDEs on a compact connected Riemannian manifolds without boundary. The problem is to prove that there are no solutions other than the constant function. These rigidity results yield sharp Sobolev type inequalities. While some of the results date back to the 90-ies, a new perspective has emerged in the last five years. The idea is to use porous media or fast diffusion flows that yield relatively straightforward proofs for such rigidity results. (Received August 19, 2013)