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Sheldon E Newhouse* (newhouse@math.msu.edu), Mathematics Department, Michigan State University, E. Lansing, MI 48824-1027. *Numerical Computation of Invariant Manifolds and Applications*. Preliminary report.

Stable and unstable manifolds of hyperbolic periodic points play a fundamental in smooth dynamics. While there are long established methods for proving the local existence and smoothness of these manifolds, it is often an important and challenging problem to get global information. We describe some new techniques for dealing with the global structure of invariant manifolds, and present some applications. (Received August 05, 2007)