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**David Richeson\*** ([richesod@dickinson.edu](mailto:richesod@dickinson.edu)), Department of Mathematics and Comp. Sci., Dickinson College, Carlisle, PA 17013, and **Jim Wiseman**. *Symbolic Dynamics for Nonhyperbolic Systems*.

We introduce index systems, a tool for studying isolated invariant sets of dynamical systems that are not necessarily hyperbolic. The mapping of the index systems mimics the expansion and contraction of hyperbolic maps on the tangent space, and they may be used like Markov partitions to generate symbolic dynamics. Every continuous dynamical system satisfying a weak form of expansiveness possesses an index system. Because of their topological robustness, they can be used to obtain rigorous results from computer approximations of a dynamical system. (Received September 22, 2009)