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J. Ding* (jiudin@gmail.com), Department of Mathematics, University of Southern Mississippi, 118 College Dr., Box 5045, Hattiesburg, MS 39406, and **N. Rhee**. *A Stable Maximum Entropy Method with High Precision for Invariant Density Computation.*

The traditional maximum entropy method has a serious ill-conditioning issue. We have succeeded in simplifying the nonlinear equations, the solution of which is the main numerical work of the method, so that the condition number of the system is very small. And thus we have developed a fast and stable piecewise polynomial maximum entropy method for the computation of invariant densities of deterministic dynamical systems. (Received August 02, 2013)