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Hubertus F von Bremen* (hfvonbremen@csupomona.edu), Department of Mathematics and Statistics, 3801 West Temple Avenue, Pomona, CA 91768. *Computation of Lyapunov Characteristic Exponents of Low Dimensional Continuous Dynamical Systems.*

A method for computing the Lyapunov characteristic exponents (LCEs) of continuous dynamical systems based on the key observation that any orthogonal matrix can be expressed as the exponential of a skew symmetric matrix will be presented. With this observation, one can get a significant reduction in the number of differential equations that one has to solve. Additionally, the method does not suffer from the type of computational breakdown that occurs with the standard method for computing LCEs. An implementation of the approach to systems of low dimensions, not available in the literature, will be presented. This significantly extends the range of problems that can be studied with the approach. (Received March 05, 2008)