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Daniel Hemberger and **James A Walsh*** (jim.a.walsh@oberlin.edu), Department of Mathematics, Oberlin College, 10 N. Professor St, Oberlin, OH 44074. *An elementary approach to a symplectic integration algorithm.*

Symplectic integration algorithms have proven far superior to Runge-Kutta type methods in approximating the long-term, qualitative behavior of solutions to Hamiltonian systems of ODEs. In this talk we present an approach to a symplectic integration algorithm devoid of much of the usual machinery of differential forms, generating functions, and exponential operators. We present simulations and a comparison with a fourth-order Runge-Kutta algorithm. The surprisingly simple code was written and executed in *Matlab* by the first author. (Received August 31, 2006)