1014-70-1347 **Dmitry V. Zenkov*** (`dvzenkov@unity.ncsu.edu`), Department of Mathematics, North Carolina State University, 255 Harrelson Hall, Raleigh, NC 27695, and **Yuri N. Fedorov**. *Variational Integrators for Nonholonomic Systems on Lie Groups.*

Variational integrators are discrete dynamical systems obtained by discretizing the principle of critical action, rather than discretizing the Euler–Lagrange equations, of a continuous-time mechanical system. In this talk we will introduce variational integrators for nonholonomic systems on Lie groups with left-invariant constraints. Structure-preserving properties of these integrators, such as conservation of momentum and measure, will be discussed. This is joint work with Yuri Fedorov. (Received September 27, 2005)

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