

1044-70-210

Cameron Lynch and **Dmitry Zenkov*** (dvzenkov@ncsu.edu), Department of Mathematics,
North Carolina State University, Raleigh, NC 27695. *Stability of Relative Equilibria of
Nonholonomic Integrators.*

Nonholonomic integrators are discrete-time analogues of nonholonomic mechanical systems. Conditions for partial asymptotic stability of relative equilibria of nonholonomic integrators with symmetry are established. For integrators obtained by discretization of continuous-time dynamics, stability conditions are compared to those of the associated continuous-time systems. The results are then illustrated with a stability analysis of the discrete roller racer. (Received September 02, 2008)