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Cameron Lynch (celynch2@ncsu.edu) and **Dmitry Zenkov*** (dvzenkov@ncsu.edu). *Stability of Relative Equilibria of Nonholonomic Integrators with Semidirect Symmetry.*

Nonholonomic integrators are discrete-time analogues of mechanical systems with velocity constraints. Conditions for partial asymptotic stability of relative equilibria of nonholonomic integrators with semidirect 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 illustrated with a stability analysis of the discrete roller racer. (Received August 28, 2009)