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Cameron Lynch and **Dmitry V Zenkov*** (dvzenkov@ncsu.edu). *Stability of Relative Equilibria of Discrete Nonholonomic Systems.*

Nonholonomic systems are mechanical systems subject to velocity constraints, such as rolling and/or sliding contacts. 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. (Received February 09, 2009)