

**Berezinskaya, S. N.; Kugushev, E. I.; Sorokina, O. V.**

**Motion of mechanical systems with unilateral constraints.** (Russian, English) Zbl 1100.70514  
*Vestn. Mosk. Univ., Ser. I* 2005, No. 3, 18-24 (2005); translation in *Mosc. Univ. Mech. Bull.* 60, No. 3, 1-8 (2005).

The authors propose to extend the d'Alembert–Lagrange principle in the integral form for mechanical systems with ideal unilateral constraints, both holonomic and nonholonomic ones. Equations of motion with measures are deduced in the form of the first and second kind Lagrange equations. Also, main dynamics laws for such systems and Routh method of ignoring cyclic coordinates are presented. Some examples are cited.

Reviewer: Julia A. Martynyuk (Kyïv)

**MSC:**

**70G45** Differential geometric methods (tensors, connections, symplectic, Poisson, contact, Riemannian, nonholonomic, etc.) for problems in mechanics

Cited in **2** Documents

**34A37** Ordinary differential equations with impulses

**70F20** Holonomic systems related to the dynamics of a system of particles

**70F25** Nonholonomic systems related to the dynamics of a system of particles

**Keywords:**

equations of motion with measures; d'Alembert–Lagrange principle