

Lagrange Equations with Multipliers for the Rigid Body

Sorin Dumitru Musat & Liliana Celia Rusu
Dunarea de Jos University of Galati

ABSTRACT

The objective of the present paper is to establish some equations concerning the dynamics of the rigid bodies with kinematical constraints. Starting from the Lagrange equations with multipliers for the incremental motion, the differential equations with multipliers for the rigid body with kinematical constraints are established by imposing the limits. It is operated with the projections of the vectors velocity of translation and the angular velocities on the axis of the reference system considered linked with the rigid body (quasi velocities). The equations of the kinematical constraints are used in a nonholonomic form. The constraining forces are resulting by projecting the forces on the axes linked with the rigid body.

Keywords: rigid body, Lagrange equations, dynamics, kinematical constraints

References

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