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Integration of Constraint Equations in Problems of a Disc and a Ball Rolling on a Horizontal Plane

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(Submitted on 20 Jul 2011)

The problem of a disc and a ball rolling on a horizontal plane without slipping is considered. Differential constrained equations are shown to be integrated when the trajectory of the point of contact is taken in a form of the natural equation, i.e. when the dependence of the curvature of the trajectory is explicitly expressed in terms of the distance passed by the point.

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