

ON CARNOT'S THEOREM IN TIME DEPENDENT IMPULSIVE MECHANICS

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Abstract

We show that the validity of the Carnot's theorem about the kinetic energy balance for a mechanical system subject to an inert impulsive kinetic constraint, once correctly framed in the time dependent geometric environment for Impulsive Mechanics given by the left and right jet bundles of the space-time bundle \mathcal{V} , is strictly related to the frame of reference used to describe the system and then it is not an intrinsic property of the mechanical system itself. We analyze in details the class of frames for which the theorem holds, showing that its dimension coincides with the codimension of the submanifold \mathcal{A}_2 of the right jet bundle $R_1(\mathcal{V})$ determining the inert constraint.

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