

A Unified Symmetry of Mechanical Systems with Variable Mass in Phase Space

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(Received: 2005-11-30; Revised:)

Abstract: In this paper, the definition and the criterion of a unified symmetry of the mechanical system with variable mass in phase space are given. The Noether conserved quantity, the generalized Hojman conserved quantity, and Mei conserved quantity deduced from the unified symmetry are obtained. An example is given to illustrate the application of the results.

PACS: 02.20.Sv, 11.30.-j, 45.20.Jj

Key words: phase space, variable mass system, unified symmetry, conserved quantity

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