Systems with a Position-Dependent-Mass and Symmetry-Preserving Inverse Problems in Lagrangian Dynamics

Rutwig Campoamor-Stursberg

I.M.I.-U.C.M, Pza. Ciencias 3, E-28040 Madrid, Spain
E-mail: rutwig@ucm.es

ABSTRACT

An inverse problem in dynamics is proposed basing symmetry-preserving perturbations of Lagrangian systems. Special types of systems with a position-dependent mass in two and more dimensions are analyzed in this context, from which a position-dependent mass ver- sion of the generalized Ermakov-Ray-Reid systems is deduced. Perturbations modifying the Riemann curvature tensor of the underlying configuration space are analyzed.