SINGULAR LAGRANGIANS AND PRECONTACT HAMILTONIAN SYSTEMS

MANUEL LAINZ

Abstract: We discuss singular Lagrangian systems on the framework contact geometry. These systems exhibit a dissipative behavior in contrast with the symplectic scenario. We develop a constraint algorithm similar to the presymplectic one studied by Gotay and Nester (the geometrization of the well-known Dirac-Bergman algorithm). We also construct the Hamiltonian counterpart and prove the equivalence with the Lagrangian side. A Dirac-Jacobi bracket is constructed similar to the Dirac bracket.