A note on metric nonlinear connections on the cotangent bundle

LIVIU POPESCU and RADU CRIVEANU

ABSTRACT.
In the present paper we continue the investigation of nonlinear connections started in [16]. The problem of metrizability of the nonlinear connection on the cotangent bundle is studied. Using the dynamical covariant derivative induced by a regular vector field, we find the coefficients of a metric nonlinear connection. For the particular case of a Hamiltonian space we prove that the canonical nonlinear connection is a unique metric and symmetric nonlinear connection.

UNIVERSITY OF CRAIOVA
FACULTY OF ECONOMICS
DEPARTMENT OF MATHEMATICS AND STATISTICS
AL. I. CUZA 13, 200585 CRAIOVA, ROMANIA
E-mail address: liviuropescu@central.ucv.ro, liviunew@yahoo.com
E-mail address: raducriv@yahoo.com