A note on metric nonlinear connections on the cotangent bundle

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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.

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