

Para H-projective transformations

Cornelia-Livia Bejan

Technical University "Gh. Asachi", Iasi, ROMANIA
[bejanliv@yahoo.com]

The present work is the contribution of Acad. Mileva Prvanovic (as a part of a joint project with C.L. Bejan and S.L. Druta-Romaniuc), elaborated in 2016.

Let M be a para-complex manifold, i.e. a differentiable manifold endowed with a para-complex structure P , which is parallel with respect to an affine connection ∇ . Another connection with the same properties is called H-projectively related to ∇ if it has the same system of H-flat paths. A characterization of the H-projectively transformations are given here. Then a H-projective curvature tensor field HP is constructed, as an invariant under the H-projective transformations. When moreover, the manifold is endowed with a (semi-)Riemannian tensor field whose Levi-Civita connection is ∇ , then this invariant HP is studied for two special cases: the locally decomposable Riemannian manifolds and the hyperbolic Kähler manifolds. The vanishing of HP is characterized in both cases.
