Geodesic mappings and their generalizations

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Our aim is to study geodesic mappings and their generalizations. The generalizations we mean holomofphically-projective and F-planar mappings. The fundamental terms and facts it is possible to find in monography [6].

In our study we find new form of a fundamental equations of above mentioned mappings. Those equations are appropriate for (pseudo-) Riemannian spaces of second order approach. We also refined fundamental equations of F-planar mappings, see [3, 4].

Geodesic and holomorphically projective mappings of spaces with equiaffine connection onto (pseudo-) Riemannian and Kählerian spaces were studied in [5, 9], see [6]. Those questions are connected to metrizability of a manifolds with affine connection. It was proved by É. Cartan that manifold with affine connection is projective equivalent to manifold with equiaffine connection as locally as globaly, see [2]. Above mentioned results are acceptable for projective and holomorphically projective metrizability of spaces with affine connection.

Holomorphically projective mappings were studied for parabollical Kähler spaces as well [7].

We also studied geodesic mappings of special spaces, for example semisymmetric projective Euclidean spaces [8].

J. Mikeš [6] studied F-planar mappings of spaces with equiaffine connection onto (pseudo-) Riemannian manifolds. Those questions are connected to metrizability as well. F_2^ε-planar mappings was studied in [1].

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