On holomorphically projective mappings of parabolic Kähler manifolds

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We study with H. Chudá, J. Mikeš, and M. Shiha fundamental equations of holomorphically projective mappings of parabolic Kähler spaces (which are generalized classical, pseudo- and hyperbolic Kähler spaces) with respect to the smoothness class of metrics, see [7,7]. We show that holomorphically projective mappings preserve the smoothness class of metrics.

We remind, that an $n$-dimensional (pseudo-) Riemannian manifold $(M, g)$ is called an $m$-parabolic Kähler manifold, if beside the metric tensor $g$, a tensor field $F$ of a rank $m > 1$ of type $(1, 1)$ is given on the manifold $M_n$, such that the following conditions hold: $F^2 = 0$, $g(X, FX) = 0$, $\nabla F = 0$, where $X$ is an arbitrary tangent vector, $\nabla$ denotes the covariant derivative.
