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Harmonic maps from complex Finsler manifolds. (English) Zbl 1152.53061

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Summary: We derive the variation formula of the $\overline{\partial}$-energy and of the ∂-energy for a smooth map from a complex Finsler manifold to an Hermitian manifold. Applying the result on a nonlinear elliptic system due to J. Jost and S. T. Yau, we obtain some existence theorems of harmonic maps from strongly Kähler Finsler manifolds to Kähler manifolds. Also, for such maps, we show that the difference between ∂-energy and $\overline{\partial}$-energy is a homotopy invariant.

MSC:

53C60 Global differential geometry of Finsler spaces and generalizations (areal metrics)
53B40 Local differential geometry of Finsler spaces and generalizations (areal metrics)

Keywords:

complex Finsler metric; harmonic map; Kähler manifold; $\bar{\partial}$-energy; homotopy invariant

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