



Physics > General Physics

# Metric Compatible or Noncompatible Finsler-Ricci Flows

Sergiu I. Vacaru

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There were elaborated different models of Finsler geometry using the Cartan (metric compatible), or Berwald and Chern (metric non-compatible) connections, the Ricci flag curvature etc. In a series of works, we studied (non)commutative metric compatible Finsler and nonholonomic generalizations of the Ricci flow theory [see S. Vacaru, J. Math. Phys. 49 (2008) 043504; 50 (2009) 073503 and references therein]. The goal of this work is to prove that there are some models of Finsler gravity and geometric evolution theories with generalized Perelman's functionals, and correspondingly derived nonholonomic Hamilton evolution equations, when metric noncompatible Finsler connections are involved. Following such an approach, we have to consider distortion tensors, uniquely defined by the Finsler metric, from the Cartan and/or the canonical metric compatible connections. We conclude that, in general, it is not possible to elaborate self-consistent models of geometric evolution with arbitrary Finsler metric noncompatible connections.

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