Brans-Dicke classical cosmology in Einstein frame and metric signature transition

H Ghaffarnejad
Semnan University P.O. Box: 35195-363, Semnan, Iran
E-mail: hghafarnejad@profs.semnan.ac.ir

(Received 9 August 2012 ; accepted 10 July 2013)

Abstract
Pauli (or Einstein) frame is used to study the Brans-Dicke gravity theory, minimally coupled with dilatonic Brans-Dicke scalar field, whose solutions involve degenerate metrics. Some of these solutions exhibit transitions from an Euclidean domain to a Lorentzian space-time corresponding to a spatially flat Robertson-Walker cosmology.

Keywords: Brans Dicke gravity, metric signature transition, Robertson Walker metric, classical cosmology, Dilaton field, Euclidean topology, Lorentzian topology, Jordan frame, Pauli frame

For full article, refer to the Persian section