

Astrophysics 2017, pages 1-11

Accelerated Expansion of the Early and Late Universe in Terms of the Scalar-Tensor Theory of Gravitation. I

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Abstract

© 2017 Springer Science+Business Media New YorkThe basic idea behind the evolutionary development of the early universe is that the hot stage was preceded by the inflationary stage. In most modern concepts of the inflationary regime, it is assumed that a specific scalar field (inflaton) is present which expands space at enormous rates, while the temperature falls rapidly, real particles almost vanish, and the universe is filled by a vacuum with the equation of state $P = -\epsilon$. In the first part of this article, the cosmological scalar of the modified Jordan-Brans-Dicke (JBD) theory is chosen to be the inflaton. Problems in the “Einstein” and proper representations of the JBD theory are considered.

<http://dx.doi.org/10.1007/s10511-017-9470-0>

Keywords

Inflation, scalar-tensor theory of gravitation