

**Alam, Sarfaraz; Rai, Priyanka; Rai, L. N.; Singh, Vivek K.**  
**Gravitationally non-degenerate Petrov type-I cosmological model filled with viscous fluid in modified Brans-Dicke cosmology.** (English) [Zbl 1300.83046](#)  
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Summary: Adding the cosmological term, which is assumed to be variable in Brans-Dicke theory, we have discussed about a cylindrically symmetric cosmological model filled with viscous fluid with free gravitational field of a non-degenerate Petrov type-I. The effect of viscosity on various kinematical parameters has been discussed. Finally, this model has been transformed to the original form [*C. Brans* and *R. H. Dicke*, *Phys. Rev.*, II. Ser. 124, 925-935 (1961; [Zbl 0103.21402](#))] of Brans-Dicke theory (including a variable cosmological term).

**MSC:**

- 83F05 Cosmology
- 83C55 Macroscopic interaction of the gravitational field with matter (hydrodynamics, etc.)
- 83D05 Relativistic gravitational theories other than Einstein's, including asymmetric field theories
- 83C20 Classes of solutions; algebraically special solutions, metrics with symmetries for problems in general relativity and gravitational theory

**Keywords:**

non-degenerate; viscous fluid; cylindrically symmetric; cosmological model; Petrov type-I; Brans-Dicke theory

**Full Text:** [DOI](#)

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