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**A cylindrically symmetric universe filled with viscous fluid in a modified Brans-Dicke cosmology.** (English) [Zbl 1274.83061](#)

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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 model filled with viscous fluid with free gravitational field of Petrov type-D. 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.* (2) 124, 925–935 (1961; [Zbl 0103.21402](#))] of Brans-Dicke theory (including a variable cosmological term).

**MSC:**

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

**Keywords:**

cylindrically symmetric; viscous fluid; Brans-Dicke theory; Petrov type-D; cosmological term

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

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