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Conformally flat polytropes for anisotropic matter. (English) Zbl 1308.83041
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Summary: We analyze in detail conformally flat spherically symmetric fluid distributions, satisfying a polytropic equation of state. Among the two possible families of relativistic polytropes, only one contains models which satisfy all the required physical conditions. The ensuing configurations are necessarily anisotropic and show interesting physical properties. Prospective applications of the presented models to the study of super-Chandrasekhar white dwarfs, are discussed.

MSC:

- 83C15** Exact solutions to problems in general relativity and gravitational theory
- 83C55** Macroscopic interaction of the gravitational field with matter (hydrodynamics, etc.)
- 85A15** Galactic and stellar structure

Cited in 1 Document

Keywords:

[relativistic polytropes](#); [anisotropic fluids](#); [stellar models](#)

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