

The Structure and Signals of Neutron Stars, from Birth to Death



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Compact static stars in minimal dilatonic gravity

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We present the basic equations and relations for the relativistic static spherically symmetric stars (SSSS) in the model of minimal dilatonic gravity (MDG) which is locally equivalent to the $f(R)$ theories of gravity and gives an alternative description of the effects of dark matter and dark energy. The results for a simplest form of relativistic equation of state (EOS) of neutron matter are represented. Our approach overcomes the well known difficulties of the physics of SSSS in $f(R)$ theories of gravity introducing two novel EOS for cosmological energy-pressure densities and dilaton energy-pressure densities, as well as proper boundary conditions.

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