

## Documents

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**Static spherically symmetric wormholes in  $f(R, T)$  gravity**

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**Abstract**

In this work, we explore wormhole solutions in  $f(R, T)$  theory of gravity, where  $R$  is the scalar curvature and  $T$  is the trace of stress-energy tensor of matter. To investigate this, we consider a static spherically symmetric geometry with matter contents as anisotropic, isotropic, and barotropic fluids in three separate cases. By taking into account the Starobinsky  $f(R)$  model, we analyze the behavior of energy conditions for these different kinds of fluids. It is shown that the wormhole solutions can be constructed without exotic matter in few regions of space-time. We also give the graphical illustration of the results obtained and discuss the equilibrium picture for the anisotropic case only. It is concluded that the wormhole solutions with anisotropic matter are realistic and stable in this theory of gravity. © 2016, The Author(s).

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