

## Modified black hole with extra dimensions as an unusual dark matter candidate

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There are two branches of  $1+(3+n)$  dimensional spacetimes with  $(1+3)$ -dimensional part corresponding to spherically symmetric spacetime and with Euclidean symmetry in  $n$  extra dimensions which satisfy vacuum Einstein field equations. One branch is a trivial extension of the Schwarzschild spacetime around a gravitating body, while the second branch is nontrivial. The extra dimensions may be compactified, so that, in principle, these solutions may be relevant in our  $(1+3)$ -dimensional Universe, perhaps providing a new dark matter candidate. We will discuss some unusual features of the nontrivial case, based on the Newtonian limit, Kretschmann scalar invariant, and conserved energy defined through the Landau-Lifshitz stress-energy pseudotensor.

**Author:** MÉSZÁROS, Peter (Department of Theoretical Physics, Comenius University, Bratislava, Slovakia)

**Presenter:** MÉSZÁROS, Peter (Department of Theoretical Physics, Comenius University, Bratislava, Slovakia)