

عنوان مقاله:

Thermodynamics of charged rotating solutions in Brans–Dicke gravity with Born–Infeld field

محل انتشار:

فصلنامه فیزیک تئوری و کاربردی، دوره 11، شماره 3 (سال: 1396)

تعداد صفحات اصل مقاله: 8

نویسندگان:

J Pakravan - *Department of Physics, Razi University, Kermanshah, Iran*

M.V Takook - *Department of Physics, Razi University, Kermanshah, Iran*

خلاصه مقاله:

We derive new exact charged rotating solutions of $(n+1)$ -dimensional Brans–Dicke theory in the presence of Born–Infeld field and investigated their properties. Because of the coupling between scalar field and curvature, the field equations cannot be solved directly. Using a new conformal transformation, which transforms the Einstein–dilatons–Born–Infeld gravity Lagrangian to the Brans–Dicke–Born–Infeld gravity one, the field equations are solved. We also compute temperature, charge, mass, electric potential, and entropy; entropy, however, does not obey the area law. These quantities are invariant under conformal transformation and satisfy the first law of thermodynamics.

کلمات کلیدی:

Brans–Dicke Black holes Born–Infeld Thermodynamics

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/763685>

