

Non-minimal Wu-Yang monopole

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Abstract

We discuss new exact spherically symmetric static solutions to non-minimally extended Einstein-Yang-Mills equations. The obtained solution to the Yang-Mills subsystem is interpreted as a non-minimal Wu-Yang monopole solution. We focus on the analysis of two classes of the exact solutions to the gravitational field equations. Solutions of the first class belong to the Reissner-Nordström type, i.e., they are characterized by horizons and by the singularity at the point of origin. The solutions of the second class are regular ones. The horizons and singularities of a new type, the non-minimal ones, are indicated. © 2006 Elsevier B.V. All rights reserved.

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Keywords

Exact solutions, Non-minimal Einstein-Yang-Mills theory, Wu-Yang monopole