

A Solvable Model in Two-Dimensional Gravity Coupled to a Nonlinear Matter Field

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Abstract: The two-dimensional gravity model with a coupling constant $k=4$ and a vanishing cosmological constant coupled to a nonlinear matter field is investigated. We found that the classical equations of motion are exactly solvable and the static solutions of the induced metric and scalar curvature can be obtained analytically. These solutions may be used to describe the naked singularity at the origin.

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Key words: solvable model, two-dimensional gravity, nonlinear matter field

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