

General Relativity and Quantum Cosmology

Static Spherically Symmetric Solution of $(R \pm \{\mu\}^4/R)$ Gravity

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The static spherically symmetric solution for $(R \pm \{\mu\}^4/R)$ model of $f(R)$ gravity is investigated. We obtain the metric for space-time in the solar system that reduces to the Schwarzschild metric, when $\{\mu\}$ tends to zero. For the obtained metric, the deviation from Einstein gravity is very small. This result is different from the other results have been obtained by equivalence between $f(R)$ gravity and scalar tensor theory. Also it is shown that the vacuum solution in the solar system depends on the shape of matter distribution which differ from the Einstein's gravity.

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