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Eugeny Babichev (IJCLab): Black holes in scalar-tensor theories

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I will review black holes in scalar-tensor theories. One class of theories which allows analytic construction of solutions is related to shift-symmetric and parity-preserving scalar field. The shiftsymmetry of the scalar field yields a Noether conserved current which proves extremely useful for integrating the equations of motion. Another type of symmetry is the conformal invariance of the equation of motion of the scalar field that allows to integrate equations of motion analytically in particular classes of theories. Finally, I will consider conformal and disformal transformations as a tool to obtain new non-trivial solutions in DHOST theories.

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