

Black holes in effective field theories –dynamics and new observational signatures

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Black holes in effective field theories, such as scalar-Gauss-Bonnet and dynamical Chern-Simons gravity, offer interesting alternatives to the Kerr solution that can be tested observationally. Interestingly, the deviations from GR can be not only quantitative but strong quantitative differences can also appear. This includes the appearance of jumps between stable branches of solutions, violation of the equatorial symmetry, etc. In the present talk, we will discuss some of the most interesting examples of such beyond-Kerr black holes. Special attention will be paid to their nonlinear dynamics and the potential problems such as loss of hyperbolicity.

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