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P. Fernandes: A new approach and code for spinning black holes in modified gravity

Monday 19 December 2022 09:45 (15 minutes)

We discuss and implement a spectral method approach to computing stationary and axisymmetric black hole solutions and their properties in modified theories of gravity. The resulting code is written in the Julia language and is transparent and easily adapted to new settings. We test the code on both general relativity and on Einstein-Scalar-Gauss-Bonnet gravity. It is accurate and fast, converging on a spinning solution in these theories with tiny errors (˜ O (10ˆ−13) in most cases) in a matter of seconds.

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