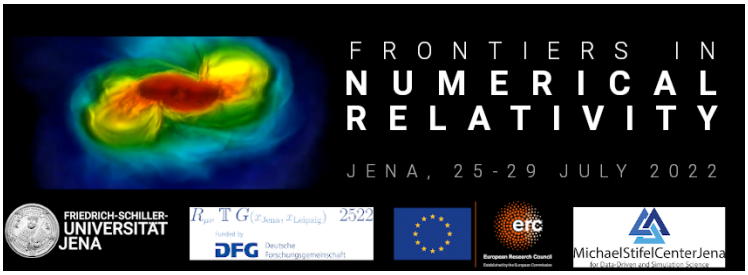

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Evolution of binary black holes in Einstein scalar Gauss Bonnet

Friday, 29 July 2022 09:30 (15 minutes)

In recent years, gravitational wave observation of black holes have furnished new opportunities to test our understanding of gravity in the strong field, highly dynamical regime. However, in order to perform model dependent tests of General Relativity with these observations one needs accurate waveforms for modified gravity theories which is still an outstanding theoretical problem. In this talk, we will discuss some recent progress in this regard, in particular the use of the modified harmonic formulation of Horndeski theories of gravity to numerically solve for the dynamics of binary black holes systems in such theories, including the merger phase. We will focus on the particular case of Einstein-Scalar-Gauss-Bonnet gravity as it is not only motivated by effective field theory but also admits scalar hairy black hole solutions.

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Session Classification: Short talks