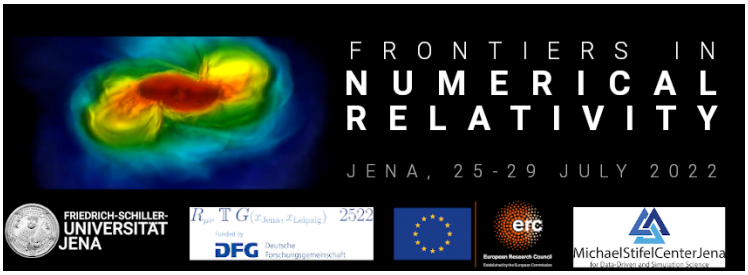

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Dynamical descalarization with a jump during black hole merger

Friday, 29 July 2022 09:45 (15 minutes)

The black hole merger in scalar-Gauss-Bonnet gravity can lead to dynamical descalarization this is a spontaneous release of the scalar hair of the newly formed black hole. Depending on the exact form of the Gauss-Bonnet coupling function, the stable scalarized solutions can be either continuously connected to the Schwarzschild black hole, or the transitions between the two can happen with a jump. In the present talk we will discuss the black hole head-on collisions in scalar-Gauss-Bonnet gravity prone to dynamical descalization and the gravitational wave manifestation of such a jump. The distinct signature in the gravitational wave signal will share similarities with the effects expected from first order matter phase transitions happening during neutron star binary mergers.

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Session Classification: Short talks