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Effective Field Theory of Black Hole Perturbations with Timelike Scalar Profile

Thursday 25 August 2022 15:00 (20 minutes)

In this talk I will present the formulation of the Effective Field Theory (EFT) of black hole perturbations within scalar-tensor theories on an inhomogeneous background. In particular, the EFT is constructed while keeping a background of a scalar field to be timelike, which spontaneously breaks the time diffeomorphism. I will then discuss a set of consistency relations that are imposed by the invariance of the EFT under the 3d spatial diffeomorphism. Finally, I will discuss the dynamics of black hole perturbations around a spherically symmetric, static background metric using our EFT.

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