

Spanish and Portuguese Relativity Meeting



Contribution ID: 61

Type: **not specified**

Perturbations of bimetric gravity on most general spherically symmetric spacetimes

Wednesday 24 July 2024 17:00 (15 minutes)

In this talk I will present a formalism to study linear perturbations of bimetric gravity on any spherically symmetric background, including dynamical spacetimes. The setup is based on the Gerlach-Sengupta formalism for general relativity. Each of the two background metrics is written as a warped product between a two-dimensional Lorentzian metric and the round metric of the two-sphere. Using the tensor spherical harmonics allows us to use a compact and covariant description of the perturbative equations both on the Lorentzian manifold and on the two-sphere, which is valid for any coordinate choice. Finally, as an interesting application, I will specialize the obtained equations to a general nonbidiagonal background with a static physical metric, where the analytical form of the background can be solved up to a function that satisfies a nonlinear partial differential equation.

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Session Classification: Parallel session 12 (Modified Gravity)