

Spanish and Portuguese Relativity Meeting



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Improved Binary Black Hole Initial Data

Monday, July 22, 2024 3:00 PM (15 minutes)

Numerical Relativity stands as a crucial tool in the identification of gravitational wave signals by constructing most of the signal templates used in the Matched Filtering Method. But this simulated collisions are still far from being perfectly realistic. In order to ensure more realistic templates I implement initial data with radiative content, utilizing Post-Newtonian descriptions of the spatial metric and extrinsic curvature in the initial time slice. The XCTS equations are solved for this data and it is then evolved using the SpECTRE code. I will describe the steps needed to construct such realistic initial data and compare the output signal with the usually evolved conformal data without gravitational waves.

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