

Metric perturbations of Kerr spacetime in Lorenz gauge using separation of variables

Monday 3 July 2023 09:00 (20 minutes)

I will describe a new separation-of-variables method for obtaining the metric perturbations of Kerr spacetime in Lorenz gauge. The metric perturbation is constructed in the frequency domain from (Teukolsky) scalars that satisfy decoupled *ordinary* differential equations. For the case of a particle moving on a circular equatorial orbit of Kerr spacetime, I will compare the results of the new method with existing numerical results from a 2+1D time-domain code. I will discuss the prospects of implementing this for generic orbits on Kerr. This talk is based on work with Barry Wardell, Chris Kavanagh and Leanne Durkan.

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