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Scattering Amplitudes for Binary Systems beyond GR

Tuesday 7 September 2021 16:10 (20 minutes)

Amplitude methods have shown to be a promising technique to perform Post-Minkowskian calculations used as inputs to construct gravitational waveforms. In this talk, I will show how to extend these methods beyond GR. As proof of principle, I will consider spinless particles conformally coupled to a gravitational helicity-0 mode. This setup leads to subtleties in the matching procedure used to construct the potential for conformally coupled matter. I will show how to tackle these subtleties when computing the potential and scattering angle for the binary system, and how the result involves a non-trivial dependence on the momentum of the scattered particles.

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