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Local-in-time conservative binary dynamics at fourth Post-Minkowskian Order

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The Post-Minkowskian expansion can efficiently describe the scattering of two massive compact objects emitting gravitational waves. In particular, the results at fourth order in Newton's constant already show remarkable agreement with numerical simulations. However, although the boundary-to-bound dictionary allows analytic continuation of local-in-time results to the case of two coalescing objects, the nonlocal-in-time contributions need to be computed and removed for this to be possible. In this talk, I will describe these computations and how they will enhance our ability to make accurate predictions for gravitational waveforms.

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