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Binary Black Holes at 5PN in Effective Field Theory

Thursday, 8 July 2021 19:00 (1 minute)

Using effective field theory methods, we calculate the 5PN potential corrections to the binary black hole system, also including the tail terms, except the purely rational terms of $O(\nu^2)$. Comparisons are made with the literature. The contributions of $O(\pi^2 \nu^2)$ are calculated for the first time. We provide the Hamiltonian for harmonic coordinates and calculate the binding energy and periastron advance. We also present the 6PN potential contributions up to G_N^4 .

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Session Classification: Post-Newtonian and Post-Minkowskian Corrections for Binary Gravitating Systems

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