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Binary Black Holes and Scattering Amplitudes

Thursday, 8 July 2021 18:30 (30 minutes)

Future gravitational wave detectors will map out and characterize every binary merger in the history of the universe. The possibilities for new and unexpected scientific discoveries from this wealth of data is staggering, but hinges crucially on complementary advances in our theoretical understanding of the nature of gravitational wave sources. However, the path from Einstein's equation to precision binary dynamics is notoriously difficult, and conventional methods may not scale to the demands of future detectors. I will describe our recent efforts in solving the relativistic two body problem using modern tools from quantum field theory.

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

Track Classification: Binaries: Post-Newtonian and post-Minkowskian corrections for binary gravitating systems