

A tale of tails via QCD insights

Saturday 4 May 2024 16:10 (20 minutes)

The first observation of gravitational waves nearly ten years ago has ushered us into the age of gravitational wave astrophysics. With an eye towards the precision of future detectors, improving theoretical understanding of gravitational wave dynamics is a necessity. In this talk, I will discuss my work on importing methods and insights from particle physics into the study of a piece of the gravitational waves problem: the tail effects. These are a collection of effects that result from handling the non-linear effects of gravitating systems including, but not limited to, binary black hole systems in a near-zone/far-zone splitting. They are particularly interesting because they are both dissipative and hereditary, and induce a renormalization group flow related to the classical source couplings. Using this novel approach opened up a new state-of-the-art with respect to tail effects, exceeding the current reach of traditional field theory frameworks.

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No

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