

Contributed Talk

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Title: Generalizing the Close Limit Approximation

Abstract: The ability to model the evolution of compact binaries from the inspiral to coalescence is central to gravitational wave astronomy. Current waveform catalogues are built from vacuum binary black hole models, by evolving Einstein equations numerically and complementing them with knowledge from slow-motion expansions. Much less is known about the coalescence process in the presence of matter, or in theories other than General Relativity. In this talk, I will show how to use the Close Limit Approximation as a powerful tool to understand the head-on collision of two equal-mass, compact but horizonless objects. Hence, I will show the appearance of “echoes”, that indicate that a significant fraction of the merger energy goes into these late-time repetitions.