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Gravitational-wave searches for Binary Black Holes: waveform models

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The direct detection of gravitational waves is imminent with the network of Advanced LIGO, Virgo, Geo, KAGRA detectors coming online. Coalescing binaries of stellar-mass black holes are one of the flagship sources for these terrestrial detectors. Planned detection searches that will be performed over the instrument data rely on models of inspiraling compact binaries. In this talk I would describe how these searches benefit from accurate numerical solutions and analytic models of coalescing compact binaries. I will also present results from recent comparisons of analytic models with high-accuracy numerical simulations of binary black hole mergers, summarizing the accuracy of current waveform models.

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