Characterizing binary black hole signals with LISA

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The future LISA detector will complement current ground-based observations of gravitational waves by targeting a lower-frequency band, enabling the detection of supermassive black hole mergers, as well as stellar mass black hole before they reach the LIGO/Virgo band. Much remains to be explored for LISA capabilities to characterize those signals. Using recently developed techniques enabling accelerated Bayesian parameter estimation simulations, we highlight the role of the merger, of higher harmonics and of the time and frequency-dependency in the LISA response. We also explore the impact of the latest instrument design updates on the length of the signals after passing the detection threshold.

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