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Gravitational Wave Data Analysis of the Ringdown Signal with Mirror Modes ISH GUPTA, ARNAB DHANI, SSOHRAB BORHANIAN, BANGALORE SATHYAPRAKASH, Pennsylvania State University — In the past few years, there have been attempts to improve the accuracy of waveforms in describing the ringdown signal of a binary black hole merger. Some recent attempts involve including higher, positive-frequency overtones in the waveform to achieve better results. In arXiv:2010.08602, the role of negative-frequency modes, called mirror modes, has been emphasized in obtaining better constraints for remnant parameters at times earlier than the peak of the signal. In this work, we perform data analysis on the ringdown signals of two gravitational wave events, GW150914 and GW190521, and show that the remnant parameters are better estimated at earlier times on the inclusion of mirror modes.

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