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## Search for nonlinear memory from subsolar mass compact binary mergers

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We present the first search for the nonlinear memory from subsolar mass binary black hole (BBH) mergers during the second observing run of the LIGO and Virgo detectors. The oscillatory chirp signal from the inspiral and merger of low mass BBHs ( $M_{\text{Total}} \leq 0.4M_{\odot}$ ) are at very high frequencies and fall outside the sensitivity band of the current ground-based detectors. However, the non-oscillatory memory signal during the merger saturates towards the lower frequencies and can be detected for those hypothetical BBHs. We show that the morphology of the memory signal depends minimally upon the binary parameters, only the overall amplitude of the signal is changed, hence the result can be interpolated for extremely low mass BBH mergers. We did not find any signal which can be interpreted as a memory signal and thus for the first time we put upper limits on the rate of BBH mergers with  $M_{\text{Total}} \leq 0.4M_{\odot}$ .

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