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Massive black hole binaries in the era of multimessenger astronomy

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Following detection by advanced LIGO and Virgo, gravitational wave (GW) stocks are on the rise. Despite their enormous impact, ground based detectors are only sensitive to GW sources in the audio band. The low frequency GW Universe is still unexplored and future spaceborne interferometers such as LISA and ongoing and future pulsar timing arrays (PTAs) have the potential to probe this window from nHz to mHz, unveiling the gravitational universe and its sources, in particular massive black hole binaries (MBHBs). Forming in the aftermath of galaxy mergers, those sources are expected to be the loudest in the GW universe and possibly bright in the electromagnetic (EM) spectrum. I will discuss the expected joint GW and EM emission of MBHBs and future opportunities for multimessenger observations with LISA and PTA and future EM facilities such as LSST, SKA, Athena.

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