

Non parametric representation for MBHB recovery from LISA data

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In the context of the LISA mission, the fast detection and recovery of MBHB (Massive Black Hole Binaries) from the LISA data is key for both the low-latency and global analysis tasks. This is especially paramount when the data are gapped or contaminated with spurious transients such as glitches. For that purpose, we introduce a hybrid non-parametric representation of MBHBs that combines an autoencoder-based modeling of the merger with a sparse modeling of the spiralling regime to provide an accurate recovery over a long time interval. We will show how the proposed signal representation can be used for detection and reconstruction tasks on both ungapped and gapped simulated LISA data.

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