

Identifying LISA verification binaries amongst the Galactic population of double white dwarfs

Double white dwarfs (DWDs) will be the most numerous GW sources for LISA. Most Galactic DWDs will be unresolved and will form a confusion noise foreground, the dominant LISA noise source around $\sim 0.5 - 3$ mHz. Around 1% of these sources will stand out from the background and be individually detectable. An even smaller fraction (approximately one in a million) will be known in advance from electromagnetic observations and are guaranteed LISA sources; these are known as verification binaries (VBs). In this talk I will present an update on recent work by the Birmingham group on VB sources aimed at exploring what we can learn from GW and joint EM/GW observations of VBs, estimating the time to detection for the loudest VBs in the early months of LISA operations, and analysing VBs in the presence of unknown numbers of other signals (both resolved and unresolved).

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