

Abstract Submitted  
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**sdB binaries as gravitational-wave sources for LISA**<sup>1</sup> RAVI KUMAR KOPPARAPU, CGWP, Penn State, RICHARD WADE, Dept. of Astronomy, Penn State — We discuss binary systems containing hot subluminoous dwarf B (sdB) stars as gravitational-wave (GW) sources for the proposed space-based detector LISA. “sdB” stars are core-helium burning systems with masses near 0.5 Msun, covered with thin hydrogen envelopes. They lie at the extreme blue end of the horizontal branch of the H-R diagram. They directly evolve to the white dwarf (WD) cooling sequence, avoiding the asymptotic giant branch. Observational evidence in some sdB binaries points to a WD or NS/BH companion, indicating that the short period systems could be potential low frequency ( $10^{-4}$  - 1 Hz) GW sources. Here, we first discuss different scenarios of forming sdB binaries, including the formation of a sdB+sdB system that can probably live long enough to be observable as a GW source. We also estimate the fraction of sdB+companion binaries that are detectable by LISA in our Galaxy, compared to a similar population of double-WD binaries.

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