

Characterization and uncertainty in the detection of stochastic background signals

Martina Muratore

¹University of Trento

*martina.muratore@unitn.it

Abstract: Stochastic sources in the Gravitational-Wave LISA spectrum look like a confusion background: it is, therefore, essential to distinguish between GW background noise and instrumental noise. To detect these kinds of sources with a single interferometer like LISA, we have to look for Time Delay Interferometry channels combinations that are less sensitive to GW signals at lower frequencies, such as the null Sagnac channel which can be used to characterize the noise. Thus, the focus of our research is the instrumental noise characterization and for this purpose, we are studying, in details, the proper time delays of each TDI combinations to understand if, using all the possible TDI channels, we can obtain a less ambiguous characterization of the properties of the noise for each TDI configuration. The aim is to achieve a sufficient description of the LISA sensitivity to distinguish the stochastic GW signals from the instrumental noise.