

From the stochastic gravitational signal to fundamental physics with LISA

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The late and early universe is rich of sources that generated stochastic gravitational wave background (SGWB) signals in the LISA frequency band. By the time that LISA flies, the predictions of these signals, and therefore their fundamental-parameter dependencies, will be much more precise than currently. In this talk we explore the illustrative scenario where these predictions have negligible theoretical uncertainties. In this case, if the SGWB is detected, the errors on the reconstruction are dominated by the LISA capabilities. We prove that by means of a precise template, LISA can estimate the fundamental parameters of the source with high accuracy. On the other hand, even without any prior knowledge of the signal, the reconstruction can be enough precise to identify the source that originated the signal.