

# Studying modified gravitational-wave propagation with LISA

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In this talk I will introduce the concept of gravitational-wave luminosity distance and its difference with respect to the usual electromagnetic one in modified theories of gravity. I will then explain how to use this notion for probing gravity on cosmological scales, showing its importance for dark energy studies. After proposing a quite general parametrization for the ratio between the two luminosity distances, the main focus will be on the prospects for constraints on modified gravitational-wave propagation, obtained within the LISA Cosmology Working Group by running MCMC on catalogs of mock standard sirens.

## References

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- [2] E. Belgacem, Y. Dirian, S. Foffa, and M. Maggiore, “Modified gravitational-wave propagation and standard sirens”, *Phys. Rev. D* 98 (2018) 023510, arXiv:1805.08731 [gr-qc].
- [3] E. Belgacem et al. (LISA Cosmology Working Group), “Testing modified gravity at cosmological distances with LISA standard sirens”, *in preparation*.