

LISA ringdown: an interesting test of GR?

GR + fields + ζ interaction

Many examples in literature can fit this definition: scalar-tensor theories, higher derivative gravity, Einstein-Gauss-Bonnet, dynamical Chern-Simons, Einstein-Maxwell and more...

- For LVK $\zeta \ll 1$
- For LISA $\zeta \lllll 1$

see e.g. discussion in d'Addario+ 2023

Maybe quadratic effects can be relevant?

Which effects are relevant for ringdowns in LISA?

- Nonlinearities
- Overtones ($n=1$, $n=2$?)
- Waveform systematics
- Environmental effects
- Instabilities
- Memory effect (lower frequency)
- Tails
- Lensing
- Echoes