

Exercises lecture four

1. Suppose that at the moment we turn on the LISA detector, it picks up the signal of a binary system with masses $60 M_{\text{sun}}$ and $55 M_{\text{sun}}$, emitting GWs at about 0.01 Hz. Will this system be detected also by the network of terrestrial interferometers? If yes, when?

2. (OPTIONAL)

In the context of linearised theory, we have found that monopole and dipole radiation are absent for GW: the monopole and dipole components are static, because of mass and momentum conservation. Is this argument true in general?