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Merging rates of compact binaries in galaxies

Friday, October 18, 2019 3:00 PM (30 minutes)

In this talk I will investigate the merging rates of compact binaries and the related detection rates of gravitational waves with current (AdvLIGO/Virgo) and future detectors (Einstein Telescope).

I will rely on three main ingredients:

- 1) a redshift dependent galaxy statistics observationally determined;
- 2) a star formation and chemical enrichment history for individual galaxies inferred from observations;
- 3) a compact remnant mass distribution taken from stellar evolution simulations.

The detailed treatment of the individual history of each single galaxy allows to relate the properties of the gravitational wave signal to the properties of the host galaxy.

Finally I will analyze the rate of lensed gravitational wave events and the gravitational wave background.

Presenter: BOCO, Lumen