

The LIGO-Virgo searches for gravitational waves associated with Fast Radio Bursts Detected by CHIME/FRB

I will present results from the search for gravitational waves associated with Fast-Radio Bursts (FRBs) detected by the CHIME/FRB experiment during the LIGO-Virgo Observing Run O3a, from 1 April 2019 - 1 October 2019 [1]. We performed both a generic (un-modelled) gravitational wave transient search and a modelled search targeting coalescing binary systems. We infer and compare the 90% credible intervals of the FRB distance posteriors to lower bounds on the GW detection distances. We also present upper limits on the possible energies emitted by gravitational waves for a range of transient models. I will describe the status of searches for gravitational wave counterparts to FRBs using the LIGO-Virgo-KAGRA O3b run and also provide projections for searches during the present O4 and the future O5 observation runs. The increased sensitivity of the GW detectors during these latter runs will start to place model constraints on a larger proportion of the FRB population.

[1] LVK Collaborations et al. 2023, ApJ, 955, 155