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Gravitational-Wave and Gamma-Ray Burst Joint Observations

Wednesday, 7 September 2022 14:00 (20 minutes)

I review the results of searches for gravitational-wave signals associated with gamma-ray bursts carried out in the first three observing runs of Advanced LIGO and Advanced Virgo. During this stretch of time, the spectacular GW170817-GRB 170817A event was observed, and constraints on the low-luminosity short gamma-ray burst population were placed. In the coming years, an increase in sensitivity of the gravitational-wave detector network is expected to yield more joint detections. I discuss the prospects for this scenario and show how the analysis of combined gravitational-wave and electromagnetic data from the same event can improve measurements of the inclination angle of the source, by breaking the degeneracy between the viewing and the jet opening angles.

Summary

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