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## Cosmology with gravitational-wave observations

*Tuesday 18 June 2024 12:10 (40 minutes)*

Brady will describe the current state of ground-based, gravitational-wave astronomy and the prospects for the future. He will present highlights from LIGO-Virgo-KAGRA observations with an emphasis on their cosmological implications. Gravitational waves from black-hole-binary mergers are now being detected about twice per week and astronomers are eagerly awaiting the next multi-messenger event. Over the next decade, a sequence of upgrades will more than double the amplitude sensitivity of the most sensitive gravitational-wave detectors and increase the rate of compact binary detections by about a factor of ten. Brady will discuss the impact of these improvements on cosmological measurements. The talk will end with a discussion of future directions for ground-based gravitational-wave astronomy.

**Presenter:** BRADY, Patrick