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Calibration of the Advanced LIGO detectors using radiation pressure SHIVARAJ KANDHASAMY, University of Mississippi, LIGO SCIENTIFIC COLLABORATION — Calibration of gravitational-wave detectors to high accuracy and precision is crucial for extracting astrophysical parameters from gravitational-wave signals. A precise calibration will also aid in studying long term instrumental effects. For interferometric gravitational-wave detectors, techniques based on radiation pressure are promising candidates for achieving absolute calibration uncertainties below 5%. These methods use auxiliary, power-modulated lasers to produce known displacements of test masses which are then used to calibrate the outputs of the detectors. Because they are external to the operation of the detectors, they are also ideal for injecting simulated gravitational-wave signals to test and characterize analysis pipelines. In this talk we describe the set up that was used during first observing run of Advanced LIGO and discuss its impact on the calibration.

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