GWADW2023 - Gravitational-Wave Advanced Detector Workshop



Contribution ID: 122

Type: Poster

Balanced Homodyne Readout at the 40m Prototype Interferometer

Tuesday, 23 May 2023 18:57 (1 minute)

LIGO Caltech operates a 40-meter prototype interferometer to validate interferometer technologies. The current experimental focus is to conduct testing of the balanced homodyne readout (BHR) scheme before integrating it into aLIGO detectors for O5. With the BHR scheme, the differential arm length signal is obtained by mixing the local oscillator (LO) field and the interferometer output field at the Michelson dark port. The LO field is obtained from the transmission of a folding mirror in the power recycling cavity. This presentation will provide a detailed discussion of the BHR testing at the 40m prototype.

Primary author: ARAI, Koji (California Institute of Technology)

Co-authors: ADHIKARI, Rana (California Institute of Technology); BHATT, Radhika (California Institute of Technology); DRORI, Yehonathan (California Institute of Technology); EDO, Tega (California Institute of Technology); GRIFFITH, Don (California Institute of Technology); GUPTA, Anchal (California Institute of Technology); MICHIMURA, Yuta (California Institute of Technology); SALCES-CARCOBA, Francisco (California Institute of Technology); SANCHEZ, Jancarlo (California Institute of Technology)

Presenter: ARAI, Koji (California Institute of Technology)

Session Classification: Tuesday Poster session

Track Classification: Current detectors and prototypes: O5 and Post O5 plans