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Purity of 10dB vacuum noise squeezing at 1064 nm

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In this talk, I will report our recent implementation of squeezed vacuum states at 1064 nm. With a bow-tie, optical parametric oscillator cavity, and our home-made balanced homodyne detectors, noise reduction up to 10dB below the vacuum is measured. With the operation of a 300 m filter cavity prototype installed at the National Astronomical Observatory of Japan, status of such a vacuum squeezed state is going to be injected from the output port of the detector, in order to achieve a broadband reduction.

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