Quantum enhanced gravitational-wave detectors

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Quantum noise is a fundamental limit to precision measurement, such as those of laser interferometer gravitational-wave detectors. Of all quantum technologies that have been proposed to improve the sensitivity of gravitational-wave detectors beyond the shot noise limit, injection of squeezed states of light has turned out to be the most effective. I will describe the current status of using squeezed states to improve the sensitivity of Advanced LIGO, and also experimental efforts for further improvements in future interferometric gravitational-wave detectors.