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Machine-learning enhanced quantum state tomography and its applications to the gravitational wave detectors

Tuesday, 1 October 2024 08:30 (30 minutes)

With this talk, I will first illustrate the implementation of our machine-learning (ML) enhanced quantum state tomography (QST) for continuous variables, through the experimentally measured data generated from squeezed vacuum states, as an example of quantum machine learning. Our recent progress in applying such a ML-QST as a crucial diagnostic toolbox for applications with squeezed states, from Wigner currents, optical cat state generation, and Bayesian estimation for GWD will be reported.

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Session Classification: Reduction of quantum noise in interferometric gravitational wave detectors

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