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Type: **Oral**

## Quantum-Enhanced Telescopy for HEP Science

*Wednesday, 8 November 2023 14:30 (15 minutes)*

Astronomical measurements, particularly using optical interferometers, can be improved – in some cases greatly so – through the new application of quantum devices such as quantum memories, single-photon sources, quantum repeaters, quantum teleportation, and more. We will review recent work in this field, a.k.a. “quantum telescopy” and show how quantum-linked optical arrays can directly address HEP science drivers for the Cosmic Frontier through distance ladder measurements, GR tests, and even observation of gravitational waves. This will lead into discussion of new technological needs.

### Early Career

No

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**Session Classification:** RDC8

**Track Classification:** RDC Parallel Sessions: RDC8: Quantum and Superconducting Sensors