

Abstract Submitted
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Quantum Spooky Lidar of Satellite Constellation¹ TIKARAM NEUPANE, WILLIAM MOORE, BAGHER TABIBI, FELIX SEO, Hampton University, HAMPTON UNIVERSITY TEAM — The conventional classic infrared lidars for atmospheric gas sensing have relatively inferior performance in terms of quantum efficiency and dark noise and lost, and requires the higher cost than their visible-range computer-parts. However, the visible measurement with infrared interaction through spatial and temporal nonlocal correlation has relatively lower cost. The quantum spooky lidar with spatial and temporal entanglement does not need an infrared detector and just use widely available single-photon avalanche diodes which offer the optimized sensitivity and signal-to-noise ratio in the visible spectra. In addition, the quantum resolution beyond classic imaging and sensing, secure quantum information without cloning, and interaction-free measurement of atmospheric gases have the significant scientific and technical merits, break new ground of atmospheric sensing and imaging technology.

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