

Single-Photon-Level Quantum Memory at Room Temperature

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<http://prl.aps.org/abstract/PRL/v107/i5/e053603> [2]

Room-temperature, easy-to-operate quantum memories are essential building blocks for future long distance quantum information networks operating on an intercontinental scale, because devices like quantum repeaters, based on quantum memories, will have to be deployed in potentially remote, inaccessible locations. Here we demonstrate controllable, broadband and efficient storage and retrieval of weak coherent light pulses at the single-photon level in warm atomic cesium vapor using the robust far off-resonant Raman memory scheme. We show that the unconditional noise floor of this technically simple quantum memory is low enough to operate in the quantum regime, even in a room-temperature environment.

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