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Storage of squeezed light as a step towards universal quantum memory¹

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The "holy grail" of the quantum optical memory research is a system that would allow high fidelity storage and retrieval of an arbitrary optical state. We present a functioning testbed for such a system, which brings together the preparation of the quantum state, the memory cell, and full characterization of both the input and the retrieved state in a single apparatus. As demonstration of its capabilities, we report high-fidelity storage and retrieval of the squeezed vacuum state using electromagnetically-induced transparency in atomic rubidium vapor.

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