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Observation of Raman self-focusing in an alkali-metal vapor cell BRETT UNKS, NICHOLAS PROITE, JONATHAN GREEN, DENIZ YAVUZ, University of Wisconsin - Madison — We report an experimental demonstration of Raman self-focusing and self-defocusing in a far-off resonant alkali-metal atomic system. The key idea is to drive a hyperfine transition in an alkali-metal atom to a maximally coherent state with two laser beams. In this regime, the two-photon detuning from the Raman resonance controls the nonlinear index of the medium.

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