Abstract Submitted
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Degenerate four-wave mixing in atomic ytterbium[1] TIAN LI, RYAN BAKER, JONATHAN WEINSTEIN, University of Nevada — We have performed degenerate four-wave mixing experiments with cryogenically-cooled atomic ytterbium. We use buffer-gas cooling to prepare high optical density samples at a temperature of 4.2 K, cold enough to resolve the different isotopes and hyperfine transitions. We observe four-wave mixing and the creation of a conjugate beam when the laser is closely detuned from the ${}^1S_0(F = 1/2) \rightarrow {}^1P_1(F = 1/2)$ transition of the ^{171}Yb ($I = 1/2$) isotope. Progress towards the generation of nonclassical light will be discussed.

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