

Abstract Submitted
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Comprehensive study of parametric resonance of high-density ultracold ^{87}Rb atoms in an optical dipole trap A. WIN, S. BALIK, M.D. HAVEY, Old Dominion University — We report a comprehensive experimental study of parametric resonance in a sample of high-density and ultracold ^{87}Rb atoms confined to a far off resonance optical dipole trap. The imaged and expanded ultracold atom cloud after parametric excitation shows significant modification, with higher sensitivity than traditional measurements of parametrically-driven trap loss. Detailed comparison of the two approaches also suggests that an imaging approach is more sensitive to the atoms near the energy minimum of the trap, and thus can provide more precise information about the harmonic part of the optical trapping potential.

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