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Line shapes in modulation transfer spectroscopy for ^{87}Rb atoms

TAEK JEONG, EUN HYUN CHA, HEUNG-RYOUL NOH, Chonnam National University, SANG EON PARK, KRISS, JONG-DAE PARK, CHANG-HO CHO, Paichai University — We present a theoretical and experimental study of line shape in modulation transfer spectroscopy for ^{87}Rb atoms. A linearly polarized modulated pump beam overlaps in parallel with an unmodulated linearly polarized probe beam. As a result of nonlinear interaction with atoms modulated probe beams are generated. The detected modulation transfer signals are calculated by numerically solving the complete density-matrix equations for the ^{87}Rb atoms. We find good agreement between calculated and experimental results.

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