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Polarization dependence of lineshapes in modulation transfer spectroscopy for ^{87}Rb Atoms HEUNG-RYOUL NOH, Chonnam Natl Univ, SANG EON PARK, Korea Research Institute of Standards and Science — We present the polarization dependence of the lineshapes in modulation transfer spectroscopy for the transitions from the lower ground state ($F_g = 1$) of ^{87}Rb atoms. We measured the spectra for the two polarization configurations: The carrier and probe beams were linearly polarized in parallel or perpendicular directions. The measured spectra were compared with the calculated results obtained by solving the density-matrix equation. We found that the spectra were strongly dependent on the polarization configurations. In particular, the signal for parallel polarization configuration was generated via an incoherent process mediated by spontaneous emission.

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