

INFLUENCE OF DIFFUSION OF ATOMS  
ON THE DARK RESONANCE LINESHAPE  
IN SPATIALLY BOUNDED  
LASER FIELDS

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S u m m a r y

We propose a diffusion model for the recently discovered diffusion-induced Ramsey narrowing arising when atoms diffuse in a buffer-gas cell in the laser radiation field. The diffusion equation for the coherence of metastable states coupled with an excited state by laser radiation of different frequencies in a three-level scheme of the atom-field interaction is obtained in the strong-collision approximation. The dependence of the shape of an absorption line near the transmission maximum of one of the frequencies on the two-photon resonance detuning for various geometries of the cell is investigated.