Abstract: Dynamics of a three-level quantum system in $\Lambda$-configuration driven by a resonant laser field with and without frequency modulation (FM) is studied for the first time in detail using two simulation techniques – the density matrix and quantum trajectories analysis. This analysis was applied to the FM-spectroscopy of coherent dark resonances in Cs atoms and computer simulation results for the absorption spectra are in qualitative agreement with those taken in an experiment.

Mechanism of forming the dark resonances for the case of the $\Lambda$-system interacting with the frequency-modulated laser field

Computer modeling of frequency-modulation spectra of coherent dark resonances

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