

Spin Accumulation of Spinor Atoms in Optical Lattices

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Abstract: We obtain an effective spin correlation Hamiltonian describing the interaction of light with a two-level atom, then we investigate the classical trajectory of the two-level atom system by numerical integration of the Heisenberg equation of motion. Our results show that the spin accumulation is a very popular phenomenon as long as the spin character cannot be ignored in the Hamiltonian. We propose experimental protocol to observe this new phenomenon in further experiments.

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Key words: a two-level atom, optical lattices, spin

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