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Quantum Dynamics of Cooled Atoms in the Presence of Bose-Einstein Condensates

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Abstract: Under the Markov approximation, the quantum dynamics of cooled atoms in the presence of Bose-Einstein condensates is studied. A master equation governing the evolution of such a system is derived. Using this master equation, the distribution of the atoms in the excited states at finite temperature and the dynamics of the excited atom at zero temperature are given and discussed.

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