

The Adiabatic Wigner-Weisskopf Model

mardi 27 juin 2023 09:55 (45 minutes)

We consider a slowly varying time dependent d-level atom interacting with a photon field. Restricted to the single excitation atom-field sector, the model is a time-dependent generalization of the Wigner-Weisskopf model describing spontaneous emission of an atomic excitation into the radiation field. We analyze the dynamics of the atom and of the radiation field in the adiabatic and small coupling approximations, in various regimes. In particular, starting with an excited atomic state, we provide a description of both the radiative decay of the atom and of the buildup of the photon excitation in the field, and we discuss some properties of the effective evolution of the atom. This is joint work with Marco Merkli.

Orateur: JOYE, Alain (Université Grenoble Alpes)