

# Quantum trajectory of the one atom maser model

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The evolution of a quantum system undergoing repeated indirect measurements naturally leads to a Markov chain on the set of states, and which is called a quantum trajectory. When the system under consideration is finite dimensional, and under some natural assumption related to the non-existence of so-called dark subspaces, the state of the system tends to become pure along the trajectory, a result which goes back to Kummerer and Maassen ('2006). This purification result is then a key step to the analysis of invariant measures: uniqueness, convergence towards it (Benoist et al. 2019). After a brief review of what is known in finite dimension I will present some results concerning purification and invariant measure(s) for the quantum trajectory associated to the (infinite dimensional) one atom maser model.

This talk is based on a joint work with T. Benoist and C. Pellegrini

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