ID de Contribution: **13** Type: **Non spécifié**

# Probabilistic properties of quantum channels

*jeudi 14 mars 2024 14:00 (1 heure)*

We investigate quantum channels, and in general quantum Markov evolutions, employing a probabilistic approach. Our interest is to study and analyze a systematic extension of the classical Markov chain theory into the quantum realm, a subject that has seen significant contributions from multiple authors in the past two decades. This seminar will specifically address absorption probabilities (absorption in invariant domains of the evolution). We address this issue by introducing appropriate positive operators, examining their structure and basic properties, their implications on accessibility relations, on the structure of fixed points and on the study of asymptotic results.
If time permits, we will try to describe some more current studies in the direction of return probabilities and expected return times.
The seminar will be mainly based on a paper in collaboration with Federico Girotti (RC, F.Girotti, Absorption in Invariant Domains for Semigroups of Quantum Channels, AHP 2021)

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