Ergodic theorems in quantum probability:
an application to monotone stochastic processes

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Abstract. We give sufficient conditions ensuring the strong ergodic property of unique mixing for C^*-dynamical systems arising from Yang-Baxter-Hecke quantisation. We discuss whether they can be applied to some important cases including Monotone, Boson, Fermion and Boolean C^*-algebras in a unified version. The Monotone and the Boolean cases are treated in full generality, the Bose/Fermi cases being already widely investigated. In fact, on the one hand we show that the set of stationary stochastic processes is isomorphic to a segment in both the Monotone and Boolean situations, on the other hand the Boolean processes enjoy the very strong property of unique mixing with respect to the fixed-point subalgebra and the Monotone ones do not.

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