MARCO MERKLI, Mathematics, Memorial University Repeated Quantum Measurement Processes

We consider a sequence of probes, sent to interact one by one with a fixed scatterer. Before interaction, the probes are independent, but they become entangled via the contact with the scatterer. After a probe finishes interacting with the scatterer, a quantum measurement is performed on the probe. The measurement history, i.e., the collection of measurement outcomes, is a stochastic process. We analyze the convergence and fluctuation properties of this process by linking its asymptotic evolution to spectral characteristics of the dynamics.