MARCO MERKLI, Mathematics, Memorial University
Repeated Interaction Quantum Systems

Consider a quantum system interacting sequentially in time, one by one, with a chain of infinitely many independent, identical other quantum systems. One may think of a scattering experiment. The entire system is an open system, due to the infinite size of the chain. We give an overview of recent results on the dynamics of such repeated interaction quantum systems. Among them are the existence and the construction of an asymptotic state and its thermodynamic properties, the influence of possible randomness, and an analysis of multi-time quantum measurements performed on chain elements after interaction. The results are based on collaborations with L. Bruneau and A. Joye, and with M. Penney.