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QUANTUM CHANNELS WITH MEMORY

2. Forgetful Quantum Channels

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Abstract:

In this lecture we introduce quantum channels with memory. Firstly, starting with a simple example of a qubit depolarizing channel, a quantum channel with Markovian correlated noise is constructed.Next we introduce a more general model of quantum memory channels, of which the above example is a special case. A special class of quantum memory channels, the so-called forgetful channels, is then defined and it is explained how one can evaluate the capacities of such channels by reducing them to memoryless channels.