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## Master Equation for Correlated Quantum Channels

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### Abstract:

Correlated quantum channels have been introduced to model situations in which consecutive uses of a quantum channel are described by correlated Kraus operators. This can may be due for instance to the fact that the first information carrier modifies the state of the environment which acts on the second information carrier or it may be due to the fact that the properties of the environment are time dependent.

Here we will derive a master equation which describes a scenario in which consecutive information carriers interact with an environment with a sort of collision model, while the environment itself undergoes, between collisions, to its own dynamics.