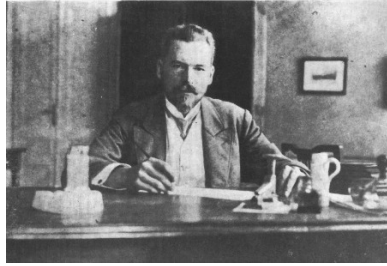


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Marginal fluctuation relations for currents

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The effective dynamics of stochastic systems with a finite number of states where only a few degrees of freedom are accessible to observation is described in terms of coarse-grained models. Coarse graining on states typically entails non-markovianity that is recovered under physically motivated assumption, thus restricting the range of applicability of such models. We use a novel approach based on occurrences of transitions to construct a coarse-grained description which provide the statistics of marginal currents up to the occurrence of a fixed number of transitions. In particular, a fluctuation relation for single currents is derived, and we extend its validity to an arbitrary number of observed transitions.

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