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Nonequilibrium fluctuations of a single biomolecule

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In recent years it has been realized that equilibrium information is subtly encoded in the fluctuations experienced by a system that is driven away from equilibrium. The key to decoding this information is a simple statistical reweighting procedure involving the external work performed in driving the system out of equilibrium. I will discuss the theoretical background of these results, as well as their applicability to the analysis of single- biomolecule pulling experiments, and to the numerical estimation of free energy differences.