[Talk 6] Microscopic theory of the entropy production

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Stochastic thermodynamics is based on the fundamental assumption that the entropy production along a stochastic trajectory is given by the irreversibility measured by the log ratio of the path probabilities of a given trajectory and its time-reversed trajectory. In this talk, we investigate the relation between the entropy production and the irreversibility for classical systems interacting with the environment and being governed by the deterministic dynamics. We show that the fundamental relation can be derived under the ideal reservoir hypothesis.