

[Talk 2] Information flow and entropy production in biochemical signal transduction

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Thermodynamics of information is a recent hot topic in nonequilibrium physics. In particular, thermodynamics with continuous information flow has attracted much attentions, because it sheds new light on autonomous information processing including biochemical signal transduction.

In this talk, I would like to discuss the fluctuation theorem with continuous information flow, and its application to biochemical information processing of *E. coli* chemotaxis. In particular, our result revealed that the robustness and the informational efficiency of biochemical adaptation processes can be quantitatively characterized by the methodologies in thermodynamics of information.