

Dissipation in open quantum systems

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The nature of dissipation in open quantum system and its information-theoretic will be discussed. I will first present an exact second law-like identity for an externally driven quantum systems interacting with a finite "reservoir", i.e. another quantum system that is initially at equilibrium. I will then consider various specific scenarios where the system dynamics can be described by a closed quantum master equation and formulate its corresponding second-law.