

Time reversibility and entropic gradient flows

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The second law of thermodynamics prescribes that a transition between two states can only occur if the entropy increases. I will explain how this law is consistent with Boltzmann's microscopic interpretation of the concept of entropy. In fact, for many macroscopic systems, we can fully regain the dynamics in terms of entropic gradient flows, through the connection with microscopic models. This technique requires that the microscopic model satisfies a special detailed balance condition.