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Is thermodynamic irreversibility a consequence of the expansion of the Universe?

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HIGHLIGHTS:

- The time asymmetry of thermodynamics could be explained based on the effect of the expansion of the Universe on local systems.
- Metric expansion of space is important in systems with positive Lyapunov exponents.
- The cosmological “arrow of time” can be considered a “master arrow of time”, which implies the “thermodynamic arrow of time”.

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