

Erratum: Universal Precision Limits in General Open Quantum Systems [Phys. Rev. Lett. **136**, 190401 (2026)]

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We correct the inadvertent omission of two references relevant to Eq. (8) of our Letter. These references should have been cited to clarify the relation between Eq. (8) and prior results.

Equation (8) states that the relative fluctuation of a time-antisymmetric current is bounded from below by $f(\Sigma + \Sigma_*)$, where f is the lower-bound function defined in the Letter, Σ is the entropy production, and Σ_* is the forward-backward asymmetry. Defining $\mathbb{P}'(\gamma) := \mathbb{P}(\tilde{\gamma})$, where $\tilde{\gamma}$ denotes the time-reversed trajectory, Eq. (A7) of the Letter gives

$$\Sigma + \Sigma_* = D(\mathbb{P} \parallel \mathbb{P}'), \quad (1)$$

where $D(\cdot \parallel \cdot)$ denotes the Kullback-Leibler divergence. Consequently, Eq. (8) can be written as

$$\frac{\text{Var}[\phi]}{\langle \phi \rangle^2} \geq f(D(\mathbb{P} \parallel \mathbb{P}')). \quad (2)$$

This is the same single-distribution inequality as Eq. (2) of Ref. [1], where it is stated for an arbitrary involution. That work should therefore have been cited.

For context, the elements underlying Eq. (2) appeared in earlier literature. Reference [2] formulated a general path-involution framework, showing that a strong detailed fluctuation theorem follows from the involution property alone, and obtained from it the nonsharp lower bound $2/(\exp[D(\mathbb{P} \parallel \mathbb{P}')] - 1)$. The sharp lower-bound function f was obtained from the same fluctuation theorem in Refs. [72] and [73] of the Letter, both of which were cited there. Reference [2] should also have been cited.

Reference [1] also proves a general two-distribution theorem [its Eq. (6)], of which its Eq. (2) is the single-distribution specialization, and applies the theorem to separate forward and backward path distributions [its Eq. (24)]. These broader two-distribution results are not derived in our Letter.

The omitted citations do not affect the validity of Eq. (8), any other result, or the figures or conclusions of the Letter. In particular, the formulation and physical characterization of Σ_* in general open quantum systems, the analysis of its relation to quantum coherence and entanglement, and the generalized activity bound in Eq. (10) remain unchanged.

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Data availability—No data were created or analyzed in this study.

[1] D. S. P. Salazar, Thermodynamic uncertainty relation from involutions, *Phys. Rev. E* **106**, L062104 (2022).

[2] T. Van Vu and Y. Hasegawa, Uncertainty relations for time-delayed Langevin systems, *Phys. Rev. E* **100**, 012134 (2019).