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**Corrigendum to “Dissipative parametric resonance in a modulated 1D Bose gas”**

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## Erratum / Erratum

Simulating gravitational problems with condensed matter analog models : a special issue in memory of Renaud Parentani (1962-2020) / *Simuler des problèmes gravitationnels avec des modèles analogues en matière condensée : un numéro spécial en mémoire de Renaud Parentani (1962-2020)*

## Corrigendum to “Dissipative parametric resonance in a modulated 1D Bose gas”

*Corrigendum à « Résonance paramétrique dissipative dans un gaz de Bose 1D modulé »*

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This note corrects the article “Dissipative parametric resonance in a modulated 1D Bose gas” published online in *Comptes Rendus Physique* on 24 April 2025, Volume 25, Special Issue S2, 2024, <https://doi.org/10.5802/crphys.250>.

First, in the text immediately following eq. (30), it is stated that: “...in the classical non-dissipative case,  $\Delta = n - c$  is exactly conserved.” This is incorrect: in the classical non-dissipative case, eq. (30) reduces to

$$(\partial_t + G)(n - c) = 0, \quad (1)$$

which implies that  $\Delta(t) = \Delta(0)e^{-Gt}$ . However, it remains true that the negative source term  $-G/2$ , which encodes the contribution from vacuum fluctuations, is necessary for an initially positive  $\Delta(0) > 0$  to become negative. Since  $\Delta < 0$  is here a necessary and sufficient entanglement criterion, this justifies interpreting entanglement as a signature of amplification of vacuum fluctuations.

Second, the sentence immediately following begins: “The positivity of the dissipative source term means that it tends to degrade the degree of correlation...” With the correction above, this wording may be unclear. To put it differently, as the dissipative source term contributes positively to the RHS of eq. (30), it acts counter to the vacuum contribution and thus hinders the progression towards an entangled state.