

Review of: "Correlated noise enhances coherence and fidelity in coupled qubits"

A.-B. Mohamed¹

¹ Assiut University

Potential competing interests: No potential competing interests to declare.

The subject of exploring the role of noise correlation in an open-loop model quantum communication system, whereby the “sender” and the “receiver” are subject to local environments with various degrees of correlation or anticorrelation, is acceptable work in quantum information.

I recommend the revised version with the following minor comments for publication in Qeios:

- 1) In Eq.(15), $\sigma_i(3)$ is not clear. In Eq.(5), “s” is not defined.
- 2) The caption of Fig. must be revised, “ Ψ^+ ”.
- 3) The authors should clarify the motivation of this manuscript. \\
- 4) The calculation of the purity depends on the density matrix, which is not defined and clear in the manuscript.
- 5) There is more work related to the effects of environments, as

Scientific Reports (2020) 10:13240; Annals of Physics

Volume 381, 137-150; Optics Communications 281 (2008) 5189–5193; IEEE Access, vol. 11, pp. 43286-43293, 2023, doi: 10.1109/ACCESS.2023.3271628.