

January 13, 2022

Ashot Melikyan,
Associate Editor,
Physical Review B.

Dear Professor Melikyan,

Thank you very much for your efforts in managing the review process for our manuscript. We are grateful for the comments of the reviewers and we believe the manuscript we submit now has been significantly improved by the constructive criticism we received. Please find herewith, the reviewer comments and our responses with the changes highlighted.

Please note that in the following sections, the statements in **blue** are the comments of the reviewers. Our responses are shown in black letters, and the modifications we have done to the manuscript are given in **red**.

General changes to the manuscript

We have made some minor changes in language and presentation to improve the clarity and organization of the manuscript.

- Section I - seventh paragraph (page 2):

In Sec. VII, we discuss the physical significance of our theoretical results and their possible use in future nanoelectronic devices. Finally, we summarize our findings and present our conclusions in Sec. VIII.

Response to the comments of Reviewer 1

We would like to thank the reviewer for his/her insightful comments on the theoretical foundations of our model. Accordingly, we have been able to significantly refine our discussion on the underlying assumptions and corresponding physical conditions of our system. We hence believe that our response, and the corresponding changes we incorporated to the manuscript would be sufficient to clarify the issues raised.

Comment 1 - I still find that the justification of approximation in Eq. (34) is sketchy and likely misses some essential effects related to the impact of the radiation on the distribution function in microwave fields.

We agree with the reviewer that the issue was not addressed properly. Therefore, we have made an extensive discussion on the underlying validity of approximation in Eq. [34].

References

Sincerely yours,

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