

Dear Editor,

I am thankful to you and to the Referee for the careful examination of my work

“Impact of antiparticle degrees of freedom on neutrino flavor oscillations in frames of quantum field theory”

Guided by the comments of the Referee, I have prepared the revised version of the manuscript where the following modification have been made:

1. New Refs. [1,2,5] have been included.
2. New text has been added on pages 1 and 2.
3. Several misprints have been corrected throughout the text.
4. Secs. ‘Funding’ and ‘Conflict of interest’ have been included.

To expedite further refereeing I have marked major changes with the bold font.

I hope that my work is suitable for the publication in Physics of Elementary Particles and Atomic Nuclei in this revised form.

Below, I provide the reply to the comments of the Referee.

Yours sincerely,
Maxim Dvornikov

I am thankful to the Referee for her/his comments

Referee statement: “Reference [1] in the very first sentence of the paper ... seems completely absurd/irrelevant ...”

Reply of the author: I have replaced the reference to the NOvA experiment with the references to the results of Super-Kamiokande [1] and SNO [2] experiments which seem to be more appropriate.

Referee statement: “... the assumption that the source is a heavy nucleus was indeed used in Ref. [4], but not in Refs.[5,6].”

Reply of the author: I have corrected this statement in the revised manuscript.

Referee statement: “... Wouldn't it be simpler (and more correct) to write $u_{\alpha\beta} = (0,0,0,1)$ ”

Reply of the author: The notation of the bispinors has been changed. However, I wrote that $u_{\alpha\beta} = (0,0,0,1)^T$ since, as a rule, a bispinor is a column rather than a row.

Referee statement: “Title of Ref.3 is wrong ...”

Reply of the author: I have modified the title of this reference.

Referee statement: “... it's certainly possible to write a sentence or two about further developments.”

Reply of the author: I have included a short review on the recent achievements on the QFT applications to neutrino oscillations on pages 1 and 2.