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Dr. Michael E. Mauel
Editor-in-Chief
AIP Physics of Plasmas

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Dear Dr. Mauel:

I am pleased to submit an original research article entitled “AWBS kinetic modeling of electrons with nonlocal Ohm’s law in plasmas relevant to inertial confinement fusion” by Milan Holec, Pascal Loiseau, Arnaud Debayle, Jonathan Brodrick, Dario Del Sorbo, Christopher Ridgers, Vladimir Tikhonchuk, Jean-Luc Feugeas, Philippe Nicolai, Bruno Dubroca and Robert Kingham for consideration for publication in the *AIP Physics of Plasmas*.

In this manuscript, we analyze and further propose a modification of the Albritton-Williams-Bernstein-Swartz collision operator Phys. Rev. Lett 57, 1887 (1986) for the nonlocal electron transport, which then exhibits some very desirable properties when compared to the full Fokker-Planck operator. It is also shown, that the hydrodynamic community can benefit from this collision operator due to its simplicity while it performs very well under plasma conditions relevant to ICF as we benchmarked it against Vlasov-Fokker-Planck and collisional PIC codes for the first time. We find that the effect of the electric field via the nonlocal Ohm’s law is an essential ingredient in order to capture the electron kinetics properly.

We believe that this manuscript is appropriate for publication by the *AIP Physics of Plasmas* because it addresses the kinetics relevant to MHD, Fokker-Planck and PIC communities and issues present in the fields of inertialy confined plasmas, high-energy density physics and astrophysics.

This manuscript has not been published and is not under consideration for publication elsewhere. We have no conflicts of interest to disclose.

Thank you for your consideration!

Sincerely,

Milan Holec, PhD
Postdoctoral Researcher at Lawrence Livermore National Laboratory