



EGUsphere, author comment AC2
<https://doi.org/10.5194/egusphere-2022-420-AC2>, 2022
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Reply on RC2

Konstantinos Papadakis et al.

Author comment on "Spatial filtering in a 6D hybrid-Vlasov scheme to alleviate adaptive mesh refinement artifacts: a case study with Vlasiator (versions 5.0, 5.1, and 5.2.1)" by Konstantinos Papadakis et al., EGU sphere,
<https://doi.org/10.5194/egusphere-2022-420-AC2>, 2022

This paper designs some kernels to filter the staircase effects arising from AMR, which is innovative. The authors carefully examine the mass conservation and computational overhead. Great work!

The authors wish to thank the reviewer for his comments on our manuscript.

We encourage the authors to check WarpX's (<https://warpX.readthedocs.io/en/21.02/theory/amr.html>) work to see if any techniques related to the absorbing layers can be utilized. Also, moving the codes to the GPU architecture is another trend.

The authors have modified the introduction to cite WarpX as related work. However, as also mentioned in the revised version of our manuscript, WarpX's methods are not compatible with Vlasiator since Vlasiator does not use a particle approach to modeling plasmas and also because Vlasiator's field solver operates on a uniform mesh.