

Ann. Geophys. Discuss., author comment AC2
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Reply on RC2

Geng Wang et al.

Author comment on "Reflection of low-frequency fast magnetosonic waves at the local two-ion cutoff frequency: observation in the plasmasphere" by Geng Wang et al., Ann. Geophys. Discuss., <https://doi.org/10.5194/angeo-2021-17-AC2>, 2021

We thank the referee for the comments and suggestions.

Major comment 1: In the simulation results shown in Figures 4s-4x, the ray slowed down near the reflection point. It is not "trapping".

Reply: Thanks for pointing out that the use of 'trapping' may not be appropriate. The sentences in line 149-151 has been revised as 'the ray slows down in the region where V_g decreases (shaded region in Figure 4s – 4x). Only the value of k maintains the rate of decreasing with time, leading to the reflection of ϕ , and the ray finally escape from the region where V_g decreases after approximately 20 seconds.'

Major comment 2: The "Conclusion and Discussion" section is basically descriptions of the two event studies. I suggest the authors briefly summarize the two event studies and draw more generalized conclusions.

Reply: Thank you for the suggestion. By taking into consideration of the comments of another referee, we are considering to remove the second case from the article, because the scenario of this case is generally the same with the Region-I and Region-II in the first case. The forth conclusion is therefore removed, and the revised conclusions are less redundant.

Reply for minor comments: Thanks for these comments. The manuscript has been revised accordingly. The sentence "as seen by the low-frequency hiss observed in the high latitude region" has been revised as "Previous studies have demonstrated the reflection of hiss waves in the high latitude region."

We thank the referee again for the comments.