Comments on MS # egusphere-2025-162
Title: Global atmospheric inversion of the anthropogenic NH3 emissions over 2019-2022 using the LMDZ-INCA chemistry-transport model and the IASI NH3 observations
Author(s): Pramod Kumar et al.
MS type: Research article
Iteration: Revised submission

I realize that this is a revised manuscript, but I have not reviewed any earlier version of this manuscript. In this regard, I have gone through the revised-track-changed version of the manuscript alongwith author's response to the Reviewer #1 and #2 comments.

In this study, the authors investigate global ammonia emissions from 2019-2022 by using satellite observations from IASI and a chemistry-transport model called LMDZ-INCA. The study updates ammonia emissions using the finite difference mass-balance through an atmospheric inversion technique. Furthermore, the paper examines regional variations in ammonia emissions and their seasonality, addressing discrepancies with current inventories and influences from COVID-19.
I found the objective of this paper very relevant for publication in ACP. The paper is mostly well written but needs some very minor language editing work (*could be taken care by copy-editor*) for a better readability to the general reader (though I have not pointed out those changes).

My observations are that both the Reviewers found the paper interesting and well written; and I also have the same opinion regarding the aim, objectives, methodology and conclusion of the research work presented in the manuscript. I spend some time to go through the Reviewer #1 critiques and corresponding responses by the authors. To me, authors have done a commendable job in addressing the major issues raised by the Reviewer #1. The responses look well augmented and easy to follow by a general reader who is not specialized domain.

Overall, I am satisfied with the scientific idea and analysis presented in the paper and authors' responses and recommend acceptance of the paper in the current form.