

Date: 22-11-2023

Dear Dr. Editor,

Atmospheric Measurement Techniques,

We are happy to submit the revised manuscript entitled '**Identifying the seeding signature in cloud particles from hydrometeor residuals**' to the prestigious journal *Atmospheric Measurement Techniques* for a possible publication.

We now have incorporated all the suggestions made by the two anonymous reviewers. With this revision we hope that the manuscript will be accepted for publication in AMT

Sincerely yours,

Thanking you,

Dr. Mahen Konwar

Indian Institute of Tropical Meteorology, Pune, India

Responses to Reviewer#1

This well-written study shows that the seeding agent in hygroscopic flares can be detected in the cloud droplets, and related to the indicated changes in cloud microstructure.

The indicated effect of the flares in the limited sample is mainly the tail effect of the largest particles initiating large cloud drops and drizzle. These results do not support the competition effect, although much more data is required for conclusive evidence. I encourage the authors to add such a statement in their conclusions.

Response: We thank the reviewer for the constructive and helpful suggestions.

Now a statement is included to emphasize the importance of the tail effect, indicating the more data are required for conclusive evidence. In addition, we also observed the role of strong updrafts in the activation of small sized CCNs in the isolated convective clouds. Now these discussions are included in the revised manuscript. The complexity in the cloud seeding experiment is stated.

There are several minor comments:

Line 31: Change “inclusive” to “elusive”.

Response: OK, it is changed now.

Figure 6b and c; Fig 7b and c: It is impossible to separate the SCI and NSCI cloud segments. If the yellow points are considered NSCI, please state so explicitly and justify it.

Response: As suggested the images are now changed for clarity.