

Atmos. Chem. Phys. Discuss., referee comment RC2
<https://doi.org/10.5194/acp-2020-1280-RC2>, 2021
© Author(s) 2021. This work is distributed under
the Creative Commons Attribution 4.0 License.

RC2

Anonymous Referee #1

Referee comment on "Lightning occurrences and intensity over the Indian region: long-term trends and future projections" by Rohit Chakraborty et al., Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2020-1280-RC2>, 2021

General comments:

The distribution, causative factors and the trends of lightning activities in different parts of India are investigated comprehensively. The main question is that some evidence or more sentences should be added to explain why the author use the variable lightning radiance, and what's the relationship between lightning radiance and the intensity of storm clouds. I recommend minor revision.

Comments & Questions:

- The main question is what's the physical meaning of lightning radiance ? As I know, in terms of satellite lightning observation, lightning flash rate is the most physically significant variable. I'm confused about the relationship between lightning radiance and the intensity of convections, please add some evidence or some more sentences to clarify under what conditions will lightning radiance increase.
- If the convection is much stronger, I think both lightning flash rate and lightning radiance should increase, but in this paper, the trends are not inconsistent. I think maybe it's related to different storm clouds. Such as lightning in stratocumulus clouds or thermal convections should be different. Authors can try to give more information about the types of clouds in different regions and add more explanations.

All above, I recommend minor revision.