

Atmos. Chem. Phys. Discuss., referee comment RC1
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Comment on acp-2021-853

Anonymous Referee #1

Referee comment on "Characterizing the dynamic movement of thunderstorms using VLF/LF total lightning data over the Pearl River Delta region" by Si Cheng et al., Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2021-853-RC1>, 2021

General comments

The work reveals the characteristics of thunderstorm dynamic movement based on eight thunderstorms evenly distributed around the Pearl River Delta (PRD) region in southern China from May 17 to May 23, 2014. They found that the storms initiated in the west of the PRD region, then moved to the east and disappeared after the thunderstorm travels around 106.5 km in longitude. In addition, there are two kinds of distribution to depict the property of valid area, which are one-peak distribution and two-peak distribution. This manuscript used five parameters and found, affected by rivers in the Pearl River Delta region, the motion of storms shows a distinct pattern, as the spread of direction distributes tightly in the range of 0°- 90° and 270°-360°. The overall structure and layout of the manuscript is clear and the experimental design is reasonable. I will suggest it to be accepted after addressing my comments below.

Specific comments

L189: The definitions of one-peak distribution and two-peak distribution in the manuscript are vague, and more detail is suggested.

L196: "Figure 5(c)(d) is not in full accord with one-peak distribution ... after the highest peak", is that means there may be three kinds of distribution of thunderstorm valid area in the whole evolution processes? Does it need to be considered separately?

L202, 220: The finding that velocity does not match precisely with the VA , which is differ from common cognition about thunderstorms, is mentioned several times in the manuscript. How is the common cognition (example references) and what causes this?

Typing error¼□

L8, 250: "was" should be replaced by "were".

L142: The full name of "PRG" should be elaborated.

L187: "3.2" should be replaced by "3.3".

L241, 245: "duation" should be replaced by "duration".

L243: "setted" should be replaced by "set".

L247: "aviod" should be replaced by "avoid".

L274: "acitivity" should be replaced by "activity".