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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Electrostatic forces alter particle size distributions in atmospheric dust" *by* Joseph R. Toth III et al.

Joseph R. Toth III et al.

jrt86@case.edu

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Thank you for your comments.

We will clarify the model description and what we mean by the field-density product.

We believe the value of 220 μC/mˆ2 is realistic for an upper bound of particle charge. We will clarify this in the text. Angus and Greber (2018) is a purely modeling study that found values on this same order of magnitude. Some of the papers they cite (such as Lowell and Rose Innes, 1980) show charge on this same order of magnitude.

For figures 6 and 7, the charge density follows a distribution. We can, instead of reporting the electric field as we did, report the standard deviation of the field-density product (charge of 110 μC/mˆ2). We do not believe the values to be unrealistic, as only

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Discussion paper

a small percentage (32%) of particles have charges greater than 110 μC/mˆ2.

We will make all the corrections to the paper, and ensure there are no more errors.

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