I thank the authors for taking into account my previous comments and for their reply. Unfortunately, my main objection is still unanswered. The authors tried to apply the findings of their short time and small scale experiment, to the long transport of dust particles in the atmosphere. They assumed that the dust particle charge can obtain very large values, and the fair weather electric field, that can be sustained in several days, are able to create the necessary electrical force to counterbalance the gravitational force and transport the particles in large distances. I do not argue, that in the laboratory, very high values of surface charge density can appear, as a consequence of the turboelectric effect. My objection is that these high values are impossible to be met in the atmosphere. I will prove my point as follows.

The highest electric field value that can appear in the atmosphere has been measured in thunderstorms right before the initiation of a lightning flash. When the electric field exceeds a specific limit, the air is ionized that leads to the discharge of the charged particles and therefore to the reduction of the electric field. Up to now there has been no indication nor observation of lightning flashes in dust clouds. Therefore, it is a valid assumption that the electric field inside a dust cloud can never exceed the lightning initiation threshold. Let's assume this threshold to be equal to ±400 kV/m [*Stolzenburg et al.*, Geophys. Res. Lett., 34, 2007]. This threshold is scaled along the altitude as a function of the neutral density. Assuming the US Standard Atmosphere 1976, the vertical distribution of the electric field threshold is shown in Fig. 1.

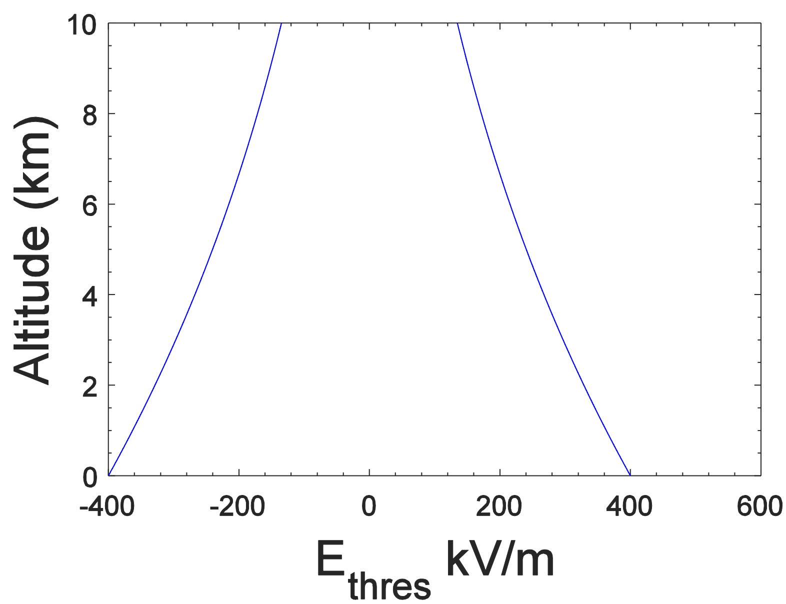

Fig. 1: Vertical distribution of the E_{thres}.

The total electric field E_{tot} at the surface of a spherical particle cannot exceed this threshold. This electric field can be written as $E_{tot} = E_{particle} + E_{ambient}$, where $E_{particle}$ is the electric field due to the charge of the particle, and $E_{ambient}$ is the ambient electric field is the large scale electric field produced by other charged particles or other mechanisms (e.g. the potential difference between the Ionosphere and the Earth's suface).

The case of a positively charged particle inside a positive electric field (pointing upwards to the Ionosphere) is examined, but the methodology can be applied in any charge polarity and in any polarity of the electric field. Moreover, the particle is assumed as a conductor of electricity in electrostatics [*Ulanowski et al.*, Atmos. Chem. Phys., 7, 2007] .

Under these valid assumptions, the surface charge density $\sigma_{particle}$ of the particle, can never exceed the value $\sigma_{lim}=(E_{thres}-E_{ambient})\varepsilon_0$, where ε_0 is the vacuum permittivity. Fig. 2 and Fig.3 show the vertical distribution of the σ_{lim} for positively and negatively charged particles, respectively. It is noted, that since an upward electric field is assumed, the electrical force for the positively charged particles tends to counterbalance the gravitational force, while the electrical force for the negatively charged particles acts in the same direction with the gravitational force leading to the faster fall of the particles (for an opposite polarity electric field obviously the opposite conclusion holds).

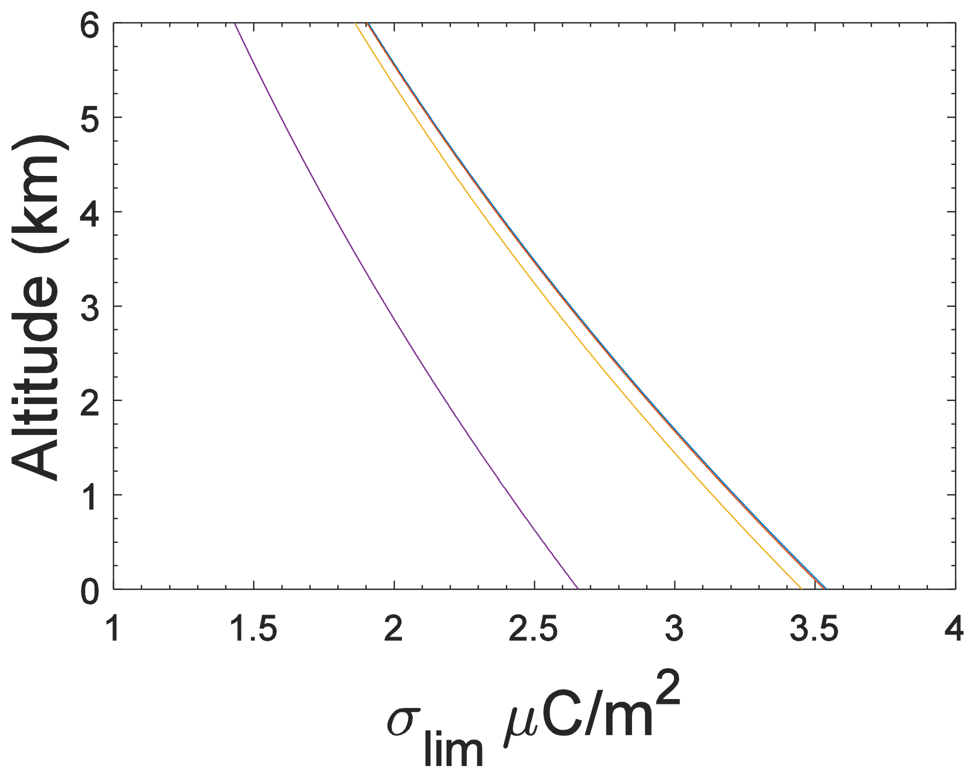

Fig.2: Vertical distribution of σ_{lim} for positively charged dust particles.

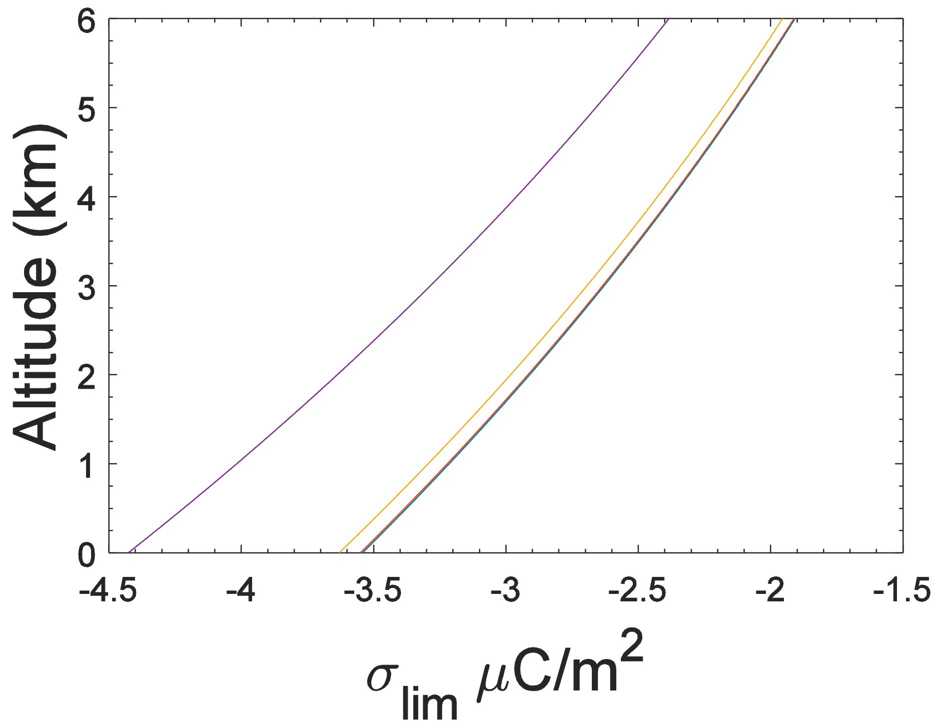

Fig.3: Vertical distribution of σ_{lim} for negatively charged dust particles.

In Fig. 2 and Fig. 3, the blue line corresponds to $E_{ambient}$ = 100 V/m, the red line corresponds to $E_{ambient}$ = 1000 V/m, the orange line corresponds to $E_{ambient}$ = 10 kV/m, and the purple line corresponds to $E_{ambient}$ = 100 kV/m.

If we are interested in the case that the electrical force counteracts the gravitational force, it is clear from Fig. 2 that the surface charge density is physically impossible to exceed the value of 3.5-3.6 μC/m^2. This is two orders of magnitude lower than the assumed upper limit value of the authors. Therefore, in their analysis in lines 230-240, the normal distribution of the surface charge density that has to be assumed for the long range transport, must have standard deviation s=3.5/3 μC/m^2, because 3s=3.5 μC/m^2. By doing that, the authors will realize that much stronger electric fields are required than the fair weather electric field, for the long range transport of the dust particles. Thus, the discussion section has to be modified accordingly.