

Interactive comment on “Ice-nucleating particles impact the severity of precipitations in West Texas” by Hemanth S. K. Vepuri et al.

Anonymous Referee #3

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The paper is not appropriate for publication. The paper tries to link INP properties and precipitation events of different strength. I was expecting at least some interesting results in Sect. 3.3 (INP results), after reading 8 pages of introductory and technical aspects. . . and after further reading of the result sections 3.1 and 3.2. But at the end there were no solid findings and convincing results. The paper contains many figures and many speculative statements. This not sufficient and satisfactory.

My main problem with the manuscript: I am not convinced that one can try to simply link INP concentration measurements at ground with rain events. You need to know cloud base where most of the aerosol particle enter the rain-producing cloud, you need to know cloud top height where ice nucleation typically starts, there may be entrainment of INP from the side. . . The strength of the thunderstorm or more generally of the rain

C1

event depends on the water vapor reservoir and meteorological conditions (sounds trivial), all this is not known here. Furthermore, on the way to the surface the rain drops collect a lot of aerosol particles (scavenging of pollution, biological and dust particles). All this material you will finally find in the collected rain water. So many questions, I got during reading and reviewing, remained open.

The paper must be rejected.

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C2