

Suggestions for revision or reasons for rejection (will be published if the paper is accepted for final publication)

The authors responded to the questions raised by the reviewers and improved the (already good) manuscript such, that I now can recommend publication in ACP.

However, I still want to point out that this may be better suited as a measurement report instead of a research article. The answer to this point was “The relevance of this study needs to be judged together with Part 2 of this series”, but that exactly underlines that likely more in-depth research is contained in Part 2. So this Part 1 could be a measurement report, laying out the basis, while then Part 2 could be an research article. But I won't insist on this and leave it up to the editor to decide this.

Reply: Authors thank reviewer for his/her valuable comments which have improved the manuscript.

Concerning the reviewer suggestion about the considering the manuscript as “ measurement report” type, we should comment that Part 1 and Part 2 of our series have been conceived as research articles and include a discussion of the results, which exceeds a pure report of measurements. In Part 1, we determine different playa surfaces of Lake Urmia based on understanding the land evolution under harsh conditions, along with analysing the erodibility of soils. We also connect ice nucleation ability of dust samples to several soil properties from dust sources and finally we identify determining factors of ice nucleation ability of dust. We consider such a combined discussion as crucial, as both erodibility and ice- nucleation activity are required for a soil to be a source of ice-nucleating particles for cloud formation. Often ice-nucleating activities of soil samples are studied without considering the erodibility of the soils. Part 1 provides such a discussion. We therefore think that Part 1 fulfils the criteria for a research article.”

There were a few typos and such, which you should check. When giving line numbers, I refer to the version with “tracked changes”.

Line 22: I know that I asked for more precise naming of the samples, but using the abbreviation of one sample “(Sa-sheets)”, and only that one, in the abstract is overdoing it. Please remove again.

Reply: we removed the Sa-sheets from the abstract.

Line 260: Please add (in case I get this right), that T_{het} and F_{het} are both concentration dependent and that these two parameters are used in your study to compare the IN activity among the studied dusts. That would have helped my understanding.

Reply: this sentence is added to the line 256: “As T_{het} and F_{het} are also affected by sample concentration, all samples are evaluated at 2 % and 5 % concentrations.”

Table 1: Sand sheets are in this table twice, now (in the first column). Once certainly should be the mix of Sand sheets and Salt crust.

Reply: Thank you very much for your comment. I think while replacing Sa-sheets throughout the manuscript Sandy Salt Crust (Sa-SC) is replaced by Sand sheets. I corrected it in the Table 1.

Table 2: It seems you added an “s” to “...chemical” (it is now “chemicsal”), but that should be removed again.

Reply: I corrected the typo in Table 2.

Figure 10: The lowermost curve (Dust MD for the 2 wt% samples) likely should have been a yellow curve. Not that it matters, I just saw that.

Reply: that is correct. I changed the color of Dust MD to yellow at 2 wt%.