

Interactive comment on “Abundance and viability of particle-attached and free-floating bacteria in dusty and nondust air” by Wei Hu et al.

Summary:

This work demonstrates the abundance and viability of different existential form of bacteria in dust and non-dust periods. The manuscript fits well to the scope of Biogeosciences and presents valuable results. Thus I recommend it to be published after the following moderate/minor comments listed below have been adequately addressed.

Comments:

1. It seems that the criterion for distinguishing particle-attached bacteria and free-floating bacteria is the size of $\sim 1\mu\text{m}$, which requires more explanations. I would suggest the authors discuss the uncertainty of selected critical size.
2. Page 3, lines 78-81: I do not understand this method. Is the bacteria identified based on the fluorescence signals? If so, how the other interferences (such as SOA, PAH et al.) are excluded? Also, why you only count particles close or smaller than $1\mu\text{m}$ (free-floating bacteria)?
3. Figure 1: the label of y-axis is not right, please correct.
4. For the discussion part 4.2-4.4, it is important to study the influences of bioaerosols, but I would suggest the authors to discuss it with their own dataset.