

# ***Interactive comment on “Nutrients Dissolution Kinetics of Aerosols at Qianliyan Island, the Yellow Sea by a High Time-resolution Nutrient Dissolution Experiment, Potential Linkages with Inorganic Compositions and P solubility controlled factors” by Ke Zhang et al.***

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The ploy-carbonate filter and cellulose filter have different pore size, which were 0.4  $\mu\text{m}$  and 20  $\mu\text{m}$ , respectively. The uniform pore size distribution of the ploy-carbonate filter and its light weight seem more appropriate for aerosol collection and dissolution study. The consistency of the use of filter for observation was surely important, however, the filter factory stopped making ploy-carbonate filters within the promotion of cellulose

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filters. To continue the observation, we had to choose to change the filters.

If the change of the filter had aerosol collection difference, it would cause less collection efficiency after the filter change theoretically, which would arouse the absolute amount difference directly. However, our results focused more on the relative amount. For example, the comparison of nutrients between water-soluble and acid-soluble ratio in the ultra-sound extraction and high time-resolution dissolution experiment. Also, dynamic dissolution parameters, such as the dissolution equilibrium time, dissolution constant and the order of the dissolution reaction were not affected by the change of filter. As for dissolution rate comparison with P and Si minerals, the absolute amount was used. P and Si mainly exist in coarse particles and both filters can capture the coarse particles. Hence, the flaw in aerosol collection did not affect the main conclusions.

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