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Atmospheric Chemistry and Physics Discussions

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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Thank you for your comment. First, so far, only the comparison between fiber filter and quartz filter on nutrient sampling and analysis (Pszenny et al., 1993) has been reported and there are no related reports about the comparison of the polycarbonate filters and cellulose fiber filters, it acquiesced that there is no difference between them on aerosol bulk sampling for nutrients analysis. None sole use of filter was an unavoidable pity

because of the shortage of polycarbonate film in the market and recommendation of cellulose fiber film in national standard. Second, the sample size was small, however, they basically captured the seasonal characteristics of the main source direction. And our high resolution experiments showed on the aerosol kinetics dissolution process, the maximum dissolution amount and the proof of the changes in aerosol during atmospheric processes by dissolution rate deviations from phosphorus and silicon minerals. I agreed that the study on more detailed processes and mechanism should be worked out in the near future with the help of sing particle collection, high-resolution electron microscope and other techniques. Third, although the geographical location affects the dissolution rate of aerosol, the general pattern, such as first-order dissolution reaction of short-time dynamic dissolution of aerosols in seawater, will not change despite of these limitations.

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