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Comment

Interactive comment on "Chemical characterization of fog and rain water collected at the eastern Andes cordillera" *by* E. Beiderwieden et al.

F. Meng (Referee)

fmeng@unb.ca

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In general, the paper is considered to be well prepared and provide some useful scientific information that potentially could be used by other researchers. However, I would suggest the paper go through some revision before final publication. The major problem is related to background information related to the experiment. Specific comments Page 864,L15: "The concentrations of all analyzed ions were relatively low compared to other mountainous sites". I assume you are comparing the ion concentration in fog water. P864 L 18-19: "The continent samples exhibit higher concentrations of most ions as compared to the pacific". I assume the difference is not significant due to limited number of samples and large variation. Site Description Really need a better description about the general climate conditions of the experiment site. I actually like

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to know the weather data during the data collection period, length of fog period, relative timing related to rain events etc. What is the general topography surround the experiment site? What is the main land use and vegetation surround the experiments site.

P 866 L3-4 Suggest change to: "This cylindrical string collector has an effective collection surface of 0.09 m2 (diameter= 0.21 m; height =0.45 m)". P 866 L 6. A roof prevented rain from reaching the fog sample. What is the size of the roof and what is the average wind speed during rain period and fog period?

P866 L 11-12: "Measurements of the liquid water content (LWC) were not possible". I do not know why this is not possible. The volume collected must be big enough to do analysis. You make people speculate that you do not want to show the data. I suggest that you do give the number regardless the form and condition of the data.

P866 L 17. "The fog samples were collected on a daily basis and the rain samples were taken once per week. For sample collection, the fog and rain water was taken from the respective collection bottle, quantified, and filled into 50 mL PE storage bottles". This does suggest that you quantify the fog and rain water before storage, since the fog water is collected on daily basis.

P867 L20-21: "For the control of the quality of the analytical results, the measured and calculated electric conductivities were compared" The assumption is that you measured all the ions including organic and inorganic. Obviously, this is not the case. Should modify this statement accordingly.

Do not see the need of the table one because the number of samples could be easily integrated into the text and the following tables.

P868 L 8 "Three fog samples, which were collected after extended non-foggy conditions, had to be excluded from further analysis" This extended non-foggy conditions really need to be defined and tells people why the other samples were not collected in

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foggy conditions. P868 L 13: "By the use of the HYSPLIT model, for every fog sample" Not every one are familiar with the HYSPLIT model and a brief introduction of the model would be helpful. Also, if the weather data are required, I would like to see some analysis regarding the direct weather parameters.

P 868 L 21-23. "The classification of the tra- trajectories leads to the hypothesis that systematic differences between these two groups trajectories should exist concerning their chemical composition. Should have a basis for this hypothesis.

You did calculate the total anion and cation concentrations according to the median. I suggest that you calculate the total concentration by each sample and also provide the same statistic for each individual ion. Same is true for the rain data.

Did not show the duplicated samples. Should give comparison with other samples to give people some idea about the variations between fog events and measurement errors.

Rain water ion concentration should be analyzed according amount of rain.

Suggest combine tables 3 and 4

Fig 3. Really need to be improved with appropriate labels and scale, directions etc.

Interactive comment on Hydrology and Earth System Sciences Discussions, 2, 863, 2005.

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