

***Interactive comment on* “Spatial and temporal dynamics of stream chemistry in a forested watershed impacted by atmospheric deposition” by K. B. Piatek et al.**

**K. B. Piatek et al.**

Received and published: 24 November 2008

In the name of co-authors, I thank both reviewers for insightful comments that will help us improve this manuscript. Below are my specific responses to each reviewer.

Reviewer P. Hazlett indicated that the title should reflect the overall objective of the study. We agree. I feel that the title already fully reflects that, and the portion about impact by atmospheric deposition is used to describe the watershed more in-depth. I think that leaving the title without such a descriptor may be misleading, as watersheds not influenced by anthropogenic deposition may be expected to have somewhat different chemical response than those that are influenced. In effect, the manuscript

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could lose readership with interests in atmospheric deposition. Therefore, I believe that the chosen title reflects particular watershed conditions and allows potential readers to choose their materials more effectively.

This reviewer also suggested that data in Figures 3 and 5 should be identical (with different symbols). I understand it to mean that each data point should be in the same XY-coordinate space regardless of whether spatial or temporal relationship was shown. This is true; our Figure 5 contained data that were averaged by period across sampling points. A more appropriate representation would have been to use all data points without averaging, and this was done in the revised manuscript.

Further, the reviewer suggested that we clarify the relationships among solutes, as some were shown as regression lines in figures, while others were not. We aimed to show only significant regressions because with 7 sampling points (Figure 3) there would have been 7 regression lines cluttering the figure. However, we recognize that this did not work well. So, we addressed this comment in the revision by adding Tables 4 and 6 which give actual  $r^2$  values for statistically significant relationships among solute concentrations.

The anonymous reviewer suggested that results need to be revised to clarify significant relationships. Again, we are appreciative of pointing that out, and do so in Tables 4 and 6 in the revised manuscript. The reviewer also advises caution in the discussion section about extrapolating some results to watershed level cycling; again, we are mindful of that as we proceed with revisions.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 5, 2581, 2008.

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