

Interactive
Comment

Interactive comment on “Spatial patterns of some trace elements in four Swedish stream networks” by J. Temnerud et al.

Anonymous Referee #1

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This paper presents the importance of systematic study of trace and major elements in river water of four river basins in Southern Sweden and clarifies the relationship between the spatial patterns of trace elements and variations of the landscapes, land-use, geographical situation and impact by acid rain and liming. This is a carefully done study and the findings are of considerable interest. Therefore, I recommend publishing this manuscript in Biogeosciences. A few moderate and minor revisions are listed below.

Moderate Comment:

All figures in Supplement show essential results in this paper. Therefore, I would recommend all figure (Fig. 1-4 and Fig. S1-S4) are explained in this text as Fig. 1-8.

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In sections 4.3 and 4.5, I would recommend to use Table 3 and/or Fig. 4 for discussion in order to understand more detailed.

Table 2 is complicated. I would recommend that chemical data are rearranged in the following order: pH, ANC, TOC; major anions (mg/l); major cations (mg/l); trace elements ($\mu\text{g/l}$); and ultra-trace elements (ng/l).

P5731, L5-10: In this section, the differences of trace elemental concentrations between filtered and unfiltered samples were discussed. However, the figure and Table showing these results were lack. What did the symbols in Fig. S2 (right) represent?

Minor Comments:

P5722 L5-6: 'In each of these basins exists Swedish long-term monitoring sites.' -> 'In each of these basins, Swedish long-term monitoring sites exist.'

P5722 L10-11: 'Concentration changes downstream are then' -> 'Concentration changes in downstream are then'

P5722 L14-15: 'In addition we want to test' -> 'In addition, we test'

P5722 L21-22: 'when the weather was stable.' -> 'when the weather was stable (Fig. 2).'

P5722 L22-23: 'In in total 243 grab samples were taken (Fig. 2 and Table 1) The majority of the samples' -> 'Total 243 grab samples were taken and the majority of the samples'

P5723 L5: 'Research Station in R. L, Buskbacken in R. G., Gardsjon in R. A. and Kindla in R. D.' -> 'Research Station in R. L., Buskbacken in R. G., Gardsjon in R. A. and Kindla in R. D.'

P5723 L11-12: 'Mean annual rainfall and runoff ranged from 1050 and 550 mm, respectively at R. A., to 750 and 250 mm at R. L.' -> 'Mean annual rainfall and runoff ranged from 1050 and 550 mm at R. A. to 750 and 250 mm at R. L., respectively.'

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P5724 L18-19: parentheses ->deleted

P5724 L24: 'HNO3' ->deleted

P5725 L2: 'Samples for anion analysis (chloride (Cl),and sulphate (SO4))' -> 'Samples for anion (chloride (Cl),and sulphate (SO4)) analysis'

P5725 L8-10: 'ICP-OES and anions analysis where performed at the Department. at Vattenlaboratoriet, Uppsala Municipality.' -> 'ICP-OES and anions analysis performed at the Department. at Vattenlaboratoriet, Uppsala Municipality, respectively.'

P5726 L9: 'cat- and anions' -> 'cations and anions'

P5727 L5: 'Na, P, SO4, for R. G.' -> 'Na, P, and SO4 for R. G., respectively.'

P5728 L9: 'The rivers (Table 2) are discussed in the following order: R.A., R. L., R. D, and R. G.' -> 'The rivers are discussed in the following order: R.A., R. L., R. D., and R. G..'

P5728 L23 : '(results not shown)' -> deleted

P2734 L17-18 : '(for Co and Mn respective Al and Cr see Figs. S3 and S4).' -> '(for Co vs. Mn and Al vs. Cr see Figs. S3 and S4, respectively).'

P5734 L21 : '(data not shown)' -> deleted

P5735 L2 : '(see Table 11.5 in Stumm, 1992)' -> '(Stumm, 1992)'

P5735 L4 : '(see PCA plots on page 196 and 202 in SEPA, 1999)' -> '(SEPA, 1999)'

P5740 L27: Kohler et al. (2011) This paper is not referred in the text.

P5745 Table 1 For Example, what is the superscript (1, 2, 2, 3) of Solitary houses? I understand these numbers are CODE of CORINE, but do these numbers of superscripts need in this Table?

P5748 Table 2 I would recommend to delete the notes under this Table '+ is ICP-OES.

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.....and Se < 500.’ and ‘++ Anions analysed on asystem.’ These notes are demonstrated in the text. Therefore, I would recommend to delete the superscripts (+ and ++) of elements in this Table.

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