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Supplement of

**Impact of snow deposition on major and trace
element concentrations and elementary fluxes in
surface waters of the Western Siberian Lowland
across a 1700 km latitudinal gradient**

Vladimir P. Shevchenko et al.

Correspondence to: Oleg S. Pokrovsky (oleg.pokrovsky@get.omp.eu)

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SUPPLEMENTARY INFORMATION

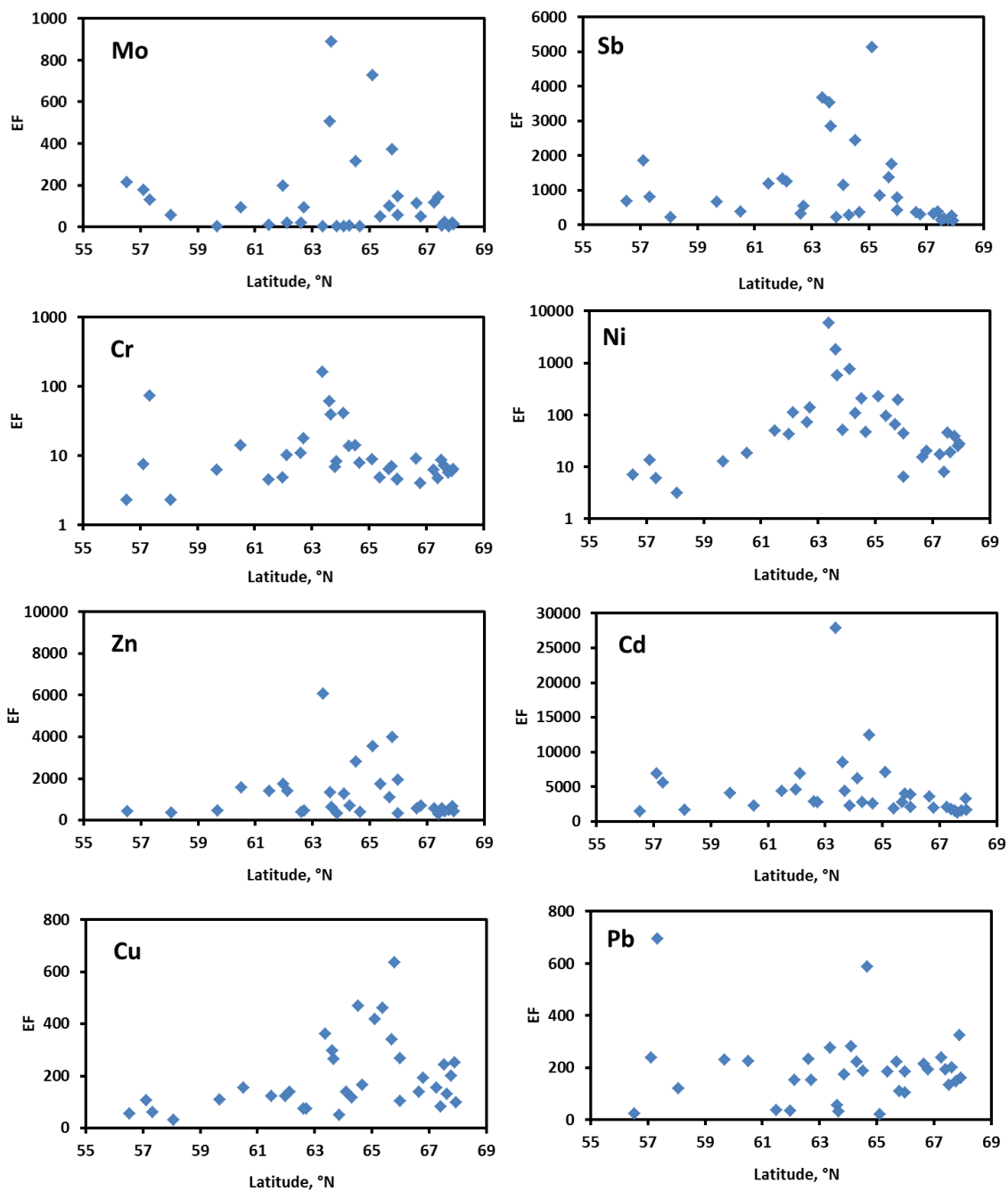
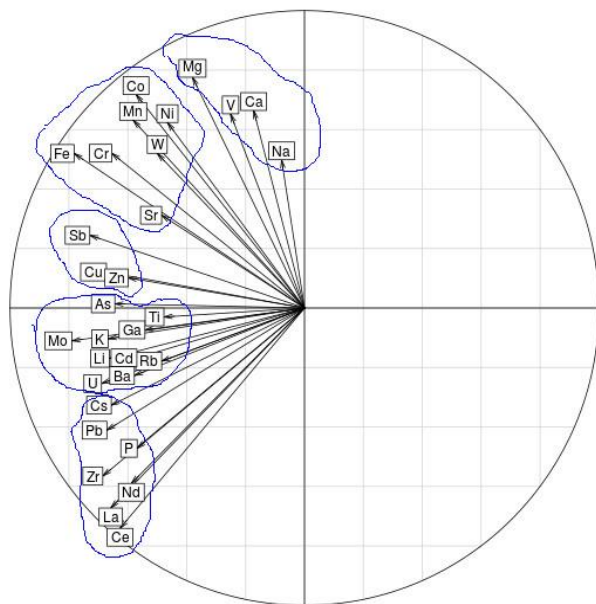
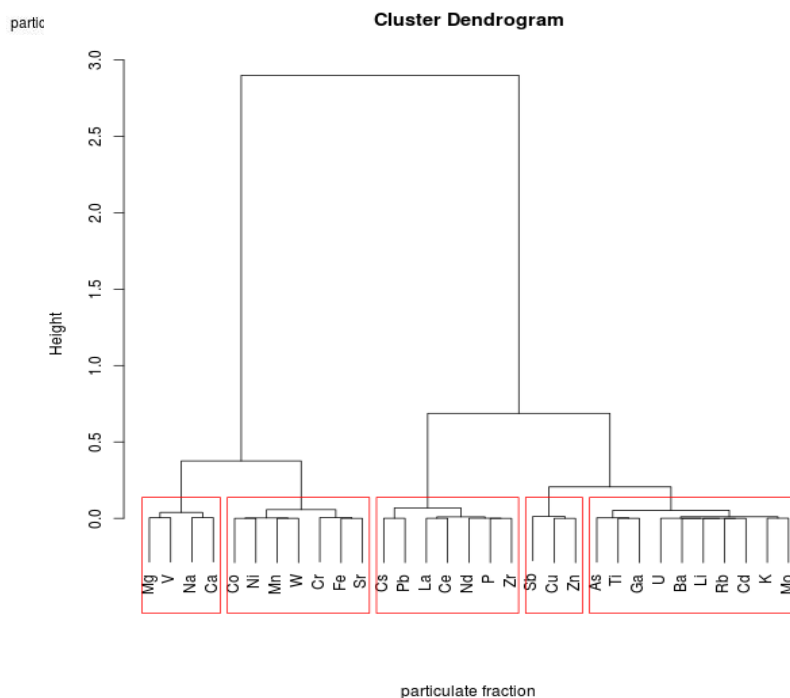


Fig. S1. The Al-based enrichment factors (relative to the upper part of continental earth crust) of particulate fraction of snow for Mo, Sb, Cr, Ni, Zn, Cd, Cu and Pb as a function of latitude.

5

**A**

15

**B****B**

25

30

Fig. S2 A. PCA Factorial map F1x2 of variables (elements) of a reconstructed table for the particulate fraction. Partition of elements into 5 groups revealed by HCA is reported by a contour line. **B:** Dendrogram of a hierarchical cluster analysis (HCA) performed on variables of a reconstructed table for the particulate fraction using Pearson correlation distance as distance measure and Ward's method for the linkage rule.

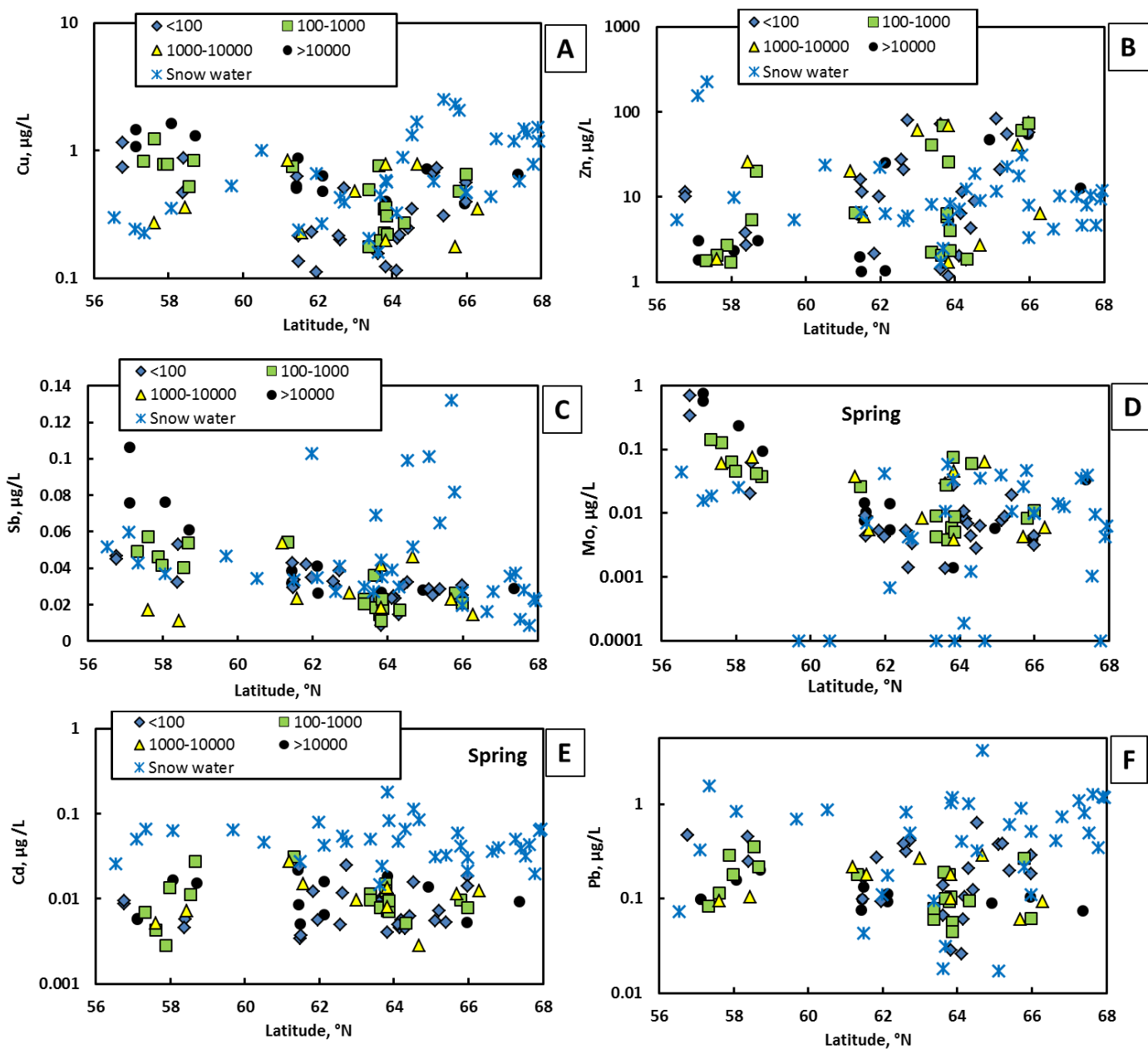


Fig. S3. Snow water soluble (< 0.45 µm) of Zn (A), Cu (B), Cd (C), Pb (D), Sb (E) and Mo (F) (blue asterisk) compared with actual concentrations in rivers during spring flood (May-June) of different size of the watershed (closed diamonds, squares, triangles and circles correspond to < 100, 100-1000, 1000-10,000 and > 10,000 km² surface area, respectively) in western Siberia along the latitudinal gradient.

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Table S1. Mineralogical composition of selected snow particles.

No	Quartz	Albite	K-Fs	Calcite	Dolomite	Chlorite	Illite	Phlogopite	Amphibole	Pyroxene	Chrysotile	Magnesite	Forsterite	Talc	Magnetite
SF-1	37	20	11	19	< 1	4	7		2						
SF-3	38	27	9	3		10	9		3						
SF-14	20	8	6	1	48	5	4		3	1	2			1	
SF-31	30	20	12		8	8		12	6		3				
SF-33	35	16	9		10	3		16	4		3	4			
SF-36	47	7	11		1	4		5	3	3	12		4	3	
SF-38	48	3	6		1	6		4	3		16		6	4	3
SF-39	41	8	6	4	8	5		12	2	2	8		2	2	
SF-40	35	12	9	6	3	4		8	4	3	10		4	2	