



Concentration of organic contaminants, mercury and other heavy metals in annual snow and shallow core records

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WP2: In-situ component for organic contaminants, mercury and other heavy metals

T2.1: Defining human impacts on polar regions – cryosphere monitoring and ice core archives

D2.1.1: Data set of anthropogenic contaminants in snow from polar regions

D2.1.2: Data set for anthropogenic contaminants in ice cores

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Snow is the second largest interface between the atmosphere and the Earth's surface during winter. Arctic and Antarctic snow are receptors for long-range contaminants emitted from the mid- to high-latitude source regions of Eurasia. The study of annual snow layers in Polar Regions for the concentration of specific compounds such as the Persistent Organics Pollutant, mercury and trace elements could improve our comprehension of the transport processes controlling the presence of such contaminants and improve our understanding of the processes that transfer them to the Arctic food chain. The annual snow layers from specific glaciers in the Spitsbergen region in Svalbard and at Villium station will be characterized for the concentrations of these compounds. Additionally, we aim to improve the annual deposition cycle for specific compounds and elements (such as mercury) by surface snow sampling in the Ny-Alesund area. The

dataset will be based on previous collected samples as well new ones from future sampling campaigns. All the available data will be integrated to estimate the temporal changes in surface snow concentrations as well the spatial variability.

The data will be then compared with transport and chemical models with the aim of improving our understanding of the biogeochemical pattern of specific human related compounds. Particular attention will be devoted to the formalization of agreements with raw-data providers in case they do not have not-public licensing policies.

References

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