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Snow chemistry at Japan Alps

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When considering the biogeochemical cycle in mountainous regions, it is essential to clarify the temporal and spatial variability of chemical concentrations and the origin of the chemical substances in precipitation. The major origins of chemicals in precipitation are sea salt, crustal material, anthropogenic and biological activity. Study area is located in the central Japan, 3000 m-class mountains are lined with mountain ranges to the Pacific from the Sea of Japan. Snowfall in the Northern Japan Alps (Hida Mountains) is caused by the winter monsoon, and the snow is due to low pressure passing the south of Honshu (Japanese main island) in the Southern Japan Alps (Akaishi Mountains). Yellow sand and the anthropogenic materials are transported in north-westerly winter monsoon from China. Furthermore, the anthropogenic materials from urban areas of west and central Japan are transported by the low pressure passing the south of Honshu. Precipitated chemical materials have been stored without changed in the snow layers before the start of snow melting. We have excavated the snow at multiple locations in the Japan Alps, and the chemistry of snow layer was studied in detail. We will report the results of chemical survey of snow pits in the Japan Alps.