Concentration of halogen inonic species in snow and ice samples collected at Antarctica H128

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In the Southern hemisphere, especially Antarctic, it is considered that the ocean and the stratosphere are the major source of halogen species. However, there is little data about halogen species contained in snow and ice in the Antarctica. In this research, halogen ion species (Br^-, BrO_3^-, Cl^-, F^-, I^-, IO_3^-) in the snow samples collected in the Antarctica were analyzed by an ionchromatograph-mass spectrometer (IC-MS).

The snow samples were collected at H128 (69°24'S, 41°34'E, 1380 m) by the Japan Antarctica research expedition. The samples were carried to Japan without thawing. The IC-MS system consists of a single quadrupole type mass spectrometer (Agilent Technologies 6150) connected to an ionchromatograph (Dionex ICS-2000).

Average concentration of Br^- was 200 ng/L. The Maximam concentration of Br^- was 1 µg/L. The concentration of BrO_3^- was mostly below 1 ng/L. The Maximam concentration of BrO_3^- was 2 µg/L. Average concentration of I^- was 8 ng/L. The maximum concentration of I^- was 70 ng/L. Average concentration of IO_3^- was 20 ng/L. The Maximam concentration of IO_3^- was 100 µg/L. Further results and discussion about the behavior and origin of halogen ion species in snow will be presented.