Spatial and seasonal characteristics of ions and trace elements in n snow of Antarctica

Soon Do Hur[1] Sungmin Hong[2] Heejin hwang[3]

[1]Korea Polar Research Institute, Korea, sdhur@kopri.re.kr
[2]Inha University, Korea
[3]Korea Polar Reseach Institue, Korea

The snowfall off the coast of Antarctica includes elements from the surrounding oceans, and it is assumed that their concentration will vary with seasonal and distances. We analyzed oxygen isotope ($\delta^{18}O$), ions (MSA, Cl^-, SO_4^{2-}, NO_3^-, Na^+, K^+, Mg^{2+}, Ca^{2+}) and trace elements (Cd, Ba, Pb, U, Bi, V, Mn, Fe, Cu, Zn, As) in a series of four snow pit samples at a distance of about 500 km from the coast of Antarctica and analyzed the temporal and spatial distribution characteristics of these elements.

In the snow samples of close to the coast, show strong positive correlation between Cl with Na, K, Mg, Ca ions and weak negative or positive correlation with almost trace metals except U, Rb and As. On the contrary, in the snows of far from the coast, show weak correlation between Cl with Na and K and strong correlation with Ca and Mg and no clear correlation with trace metals.