**PO3.4**

**Seasonal and spatial patterns of ions and trace metals concentration in the snows on Lambert Glacier, East Antarctica**

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Snow samples collected from four snow pits at Lambert Glacier basin on the way to from Chinese Zhongshan Station to Dome A in January 2001(Pit 1; 70°50′S, 77°04′E, Pit 2; 69°31′S, 76°17′E) and December 2002 (Pit3; 72°00′S, 77°55′E, Pit4: 73°15′S, 75°30′E). Oxygen isotope, ions and trace metals composition were analyzed, and compared with seasonal variations and spatial patterns from the coast of Antarctica to the inland. The correlation coefficients of the snow samples in pit 2, which is 20km far from the coast, show strong positive correlation between Cl with Na, K, Mg, Ca ions (0.92 to 1) and weak negative or positive correlation with almost trace metals (-0.34 to 0.27) except U, Rb and As (0.94, 0.98 and 0.64 respectively). On the contrary, in pit 4, 450km far from the coast, show weak correlation between Cl with Na and K (0.12 and 0.43) and strong correlation with Ca and Mg (0.52 and 0.79), and no clear correlation with trace metals.