

## Ice core studies with high-time resolution analysis on Mt. Wrangell, Alaska

# Syosaku Kanamori[1]; Takayuki Shiraiwa[2]; Sumito Matoba[3]; Teppei J. Yasunari[4]; Carl S. Benson[5]

[1] ILTS, Hokkaido Univ.; [2] RIHN; [3] PORC, ILTS, Hokkaido Univ.; [4] Earth System Sci., Hokkaido Univ.; [5] GI, UAF

Mt. Wrangell is located in south central Alaska (62N, 144W; 4317 m a.s.l.). Its broad summit has more than 35 km<sup>2</sup> above the 4000 m altitude and is dominated by a large 4 x 6 km ice-filled Caldera with post-caldera craters along its rim. Glaciologically, the summit region is in the dry-snow facies with a mean annual temperature of -20 degree C. The averaged annual accumulation rate from 1992-2003 was 2.5 m water equivalent in the center of the caldera. This correspond to 6 to 7 m in snow. This very high accumulation rate make it possible to analyze with high-time resolution. We obtained several ice cores there. The longest one is 216 m-long core in 2004. We also made a continuous snow height measurement from summer 2005 to summer 2006. From snow height data and shallow ice core in 2006, we studied timing of each events in ice core parameters like stable isotope ratio or detailed density.

Another topic on Mt. Wrangell is sudden increase of accumulation rate. In previous study in 1980s, the averaged annual accumulation rate was 0.9 m w. e. from late 1950s to 1982 at north end of caldera. The latest value at the center of caldera is almost three times larger than the previous value. From surface observation in 2006, this difference cannot be explained by spatial difference. The accumulation rate on Mt. Wrangell was changed largely in 1980s.