

アラスカの山岳氷河アイスコアから復元された降水量変動と 太平洋十年規模変動との関係

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Relation between annual accumulation reconstructed from ice cores at Alaskan alpine glaciers and Pacific Climate Shift

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To reconstruct centurial climate and environmental changes at the northern North Pacific region, we analyze the ice cores obtained from alpine glaciers at Alaska and Kamchatka. In this contribution, we present data extracted from two ice cores obtained from summit glacier of Mount Wrangell in Wrangell-St Elias Mountains and from the ice field near Aurora Peak in the Alaska Range in Alaska. Profiles of δD of both ice cores shows remarkable seasonal variations, and we estimated yearly variations of annual accumulation for 50 years from the seasonal variations of δD in the ice cores. Annual accumulation at Aurora Peak showed significant increase from 1970s to present at the rate of 28mm/yr. This significant increase trend has not been observed at any meteorological stations at ground level. Annual accumulation at Mount Wrangell showed high values before 1977, low values from 1977 to 1990, and high values after 1990. The shift of accumulation in 1977 is likely associated with the Pacific climate shift called Regime shift or Pacific Decadal Oscillation. The annual accumulation in the Wrangell ice core after 1990 anti-correlated with surface level pressure over the Gulf of Alaska.

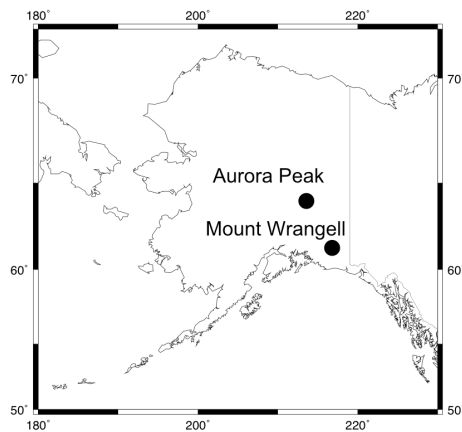


Figure 1. Location of drilling sites

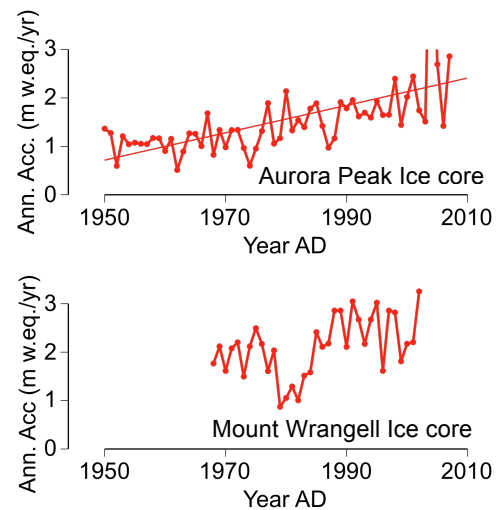


Figure 2. Estimated annual accumulation of Aurora Peak and Mount Wrangell