Preliminary results from an ice core of the Tsambagarav glacier in the Mongolian Altai

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Abstract: The upper 12m of the ice core from the Tsambagarav glacier in the Mongolian Altai extracted in the summer of 2008 (the whole length of ice core is approximately 40m) has been analyzing for stable water isotopes (δD and δ^{18}O). The δD and deuterium excess (d-excess, d=8·δ^{18}O-δD) show distinct seasonal variations, which has not been observed in the previous studies, although the linear regression between δD vs. δ^{18}O indicates isotopic retribution by meltwater percolation (the δD vs. δ^{18}O slope of the analyzed ice core, 6.7, is less than that of the global meteoric water line of 8). Our accumulation based on a five point moving average applied to the stable water isotope is 0.87$\pm$0.30m (summer peak to summer peak, approximately 14 years) per year for the first 12m of ice. The distinct seasonal variations will be used for age estimation for the entire ice core.