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Interlaboratory Calibration for Laser Ablation of Ice Cores

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We report interlaboratory comparisons of a methodology to measure and calculate concentrations of impurities in ice core samples using the Laser Ablation-Inductively Coupled Plasma-Mass Spectrometry (LA-ICP-MS) system developed at the W. M. Keck Laser Ice Facility at the Climate Change Institute, University of Maine (UMaine). Here, we will summarize results of measured artificial samples with known levels of Ca, Al, Fe, Mg, Na, Cu, Pb. We adapted a method for LA-ICP-MS analysis of the frozen standard that was developed in the laboratory at Ca' Foscari University of Venice, and we tested its applicability to the UMaine system. This work will help to measure and interpret very old and highly compressed ice core records from the Allan Hills Blue Ice Area, Antarctica, sampled with different analytical tools.