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# Fog Chemistry at Different Altitudes in the Swiss Alps

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During two extended summer seasons in 2006 and 2007, we installed two battery driven versions of the Caltech active strand cloud water collector (MiniCASCC) at the Niesen mountain in the northern Swiss Alps. Along, we measured air temperature, relative humidity, wind, and visibility. During these two field operation phases we gained weekly samples of fogwater, where we analysed the major anions and cations, and the stable water isotopes $\delta$D and $\delta^{18}$O. The fog collectors were installed at an altitude of 2300 and 1600 m asl to resolve altitudinal differences in fog chemistry. We found a large variability between the events, but no clear altitudinal gradient. At both sites, the most important ions were nitrate, ammonium, and sulphate. Higher concentrations occured preferably in late spring (start of sampling period) and in autumn (end of sampling). Compared to previous studies at lower elevations in the Swiss Plateau during wintertime, our measurements showed considerable lower ion loads in the fogwater. The combination of these results suggest that lowest ion loads are found in convective clouds with a short lifetime and that the highest ion loads occur during radiation fog events at lower elevations.