



## Ice nucleation properties of agricultural soil dusts

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Soil dust particles emitted from agricultural areas contain large amounts of organic material such as fungi, bacteria and plant debris. Being carrier for potentially highly ice-active biological particles, agricultural soil dusts are candidates for being very ice-active as well.

In this work, we present ice nucleation experiments conducted in the AIDA cloud chamber. We investigated the ice nucleation efficiency of four types of soil dust from different regions of the world. Results are presented for the immersion freezing and the deposition nucleation mode: all soil dusts show higher ice nucleation efficiencies than desert dusts, especially at temperatures above 254 K.

For one soil dust sample, the effect of heat treatments was investigated. Heat treatments did not affect the ice nucleation efficiency which presumably excludes primary biological particles as the only source of the increased ice nucleation efficiency. Therefore, organo-mineral complexes or organic compounds may contribute substantially to the high ice nucleation activity of agricultural soil dusts.