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Ice nucleating particles measured during the laboratory and field intercomparisons FIN-2 and FIN-3 by the diffusion chamber FRIDGE

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The measurement of atmospheric ice nucleating particles (INP) is still challenging. In the absence of easily applicable INP standards the intercomparison of different methods during collaborative laboratory and field workshops is a valuable tool that can shine light on the performance of individual methods for the measurement of INP [1]. FIN-2 was conducted in March 2015 at the AIDA facility in Karlsruhe as an intercomparison of mobile instruments for measuring INP [2]. FIN-3 was a field campaign at the Desert Research Institutes Storm Peak Laboratory in Colorado in September 2015 [3]. The FRankfurt Ice nucleation Deposition freezinG Experiment (FRIDGE) participated in both experiments. FRIDGE measures ice nucleating particles by electrostatic precipitation of aerosol particles onto Si-wafers in a collection unit, followed by activation, growth, and optical detection of ice crystals on the substrate in an isostatic diffusion chamber [4,5]. We will present and discuss results of our measurements of deposition/condensation INP and of immersion INP with FRIDGE during FIN-2 and FIN-3.

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