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Laboratory evidence for volume-dominated nucleation of ice in supercooled water microdroplets

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Abstract. We report on measurements of the rate of homogeneous ice nucleation in supercooled water microdroplets levitated in an electrodynamic balance. By comparison of the freezing probability for droplets of radius 49 μ m and 19 μ m, we are able to conclude that homogeneous freezing is a volume-proportional process and that surface nucleation might only be important, if at all, for much smaller droplets.

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