Atmos. Meas. Tech. Discuss., 7, C2253–C2254, 2014
www.atmos-meas-tech-discuss.net/7/C2253/2014/

Atmospheric Measurement Techniques Discussions

Interactive comment on "A two-channel, tunable diode laser-based hygrometer for measurement of water vapor and cirrus cloud ice water content in the upper troposphere and lower stratosphere" *by* T. D. Thornberry et al.

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Interpretation of data from this instrument is dependent on an assumption of ice crystal density, both for calculations of crystal evaporation within the intake and for calculations of the size-dependent concentration enhancement factor due to the sub-isokineticity of the intake. Whilst the choice you make of a value of 0.7 g cm-3 is reasonable based on Cotton et al. (2013), it is nevertheless taken from cloud data sampled at higher temperatures and pressures. It would be of interest to see what is the sensitivity to

choice of this density value, for example to a choice of solid ice spheres with a bulk density of 0.9 g cm-3.

Interactive comment on Atmos. Meas. Tech. Discuss., 7, 8271, 2014.