Atmos. Meas. Tech. Discuss.,
doi:10.5194/amt-2016-336-RC2, 2016

Atmospheric Measurement Techniques Discussions

Interactive comment on "Radar Reflectivity Factors Simulations of Ice Crystal Populations from In-Situ Observations for the Retrieval of Condensed Water Content in Tropical Mesoscale Convective Systems" *by* Emmanuel Fontaine et al.

Anonymous Referee #2

Received and published: 22 December 2016

The paper "Radar Reflectivity Factors Simulations of Ice Crystal Populations from In Situ Observations for the Retrieval of Condensed Water Content in Tropical Mesoscale Convective System", by Fontaine and co-workers, presents an evaluation of a Condensed Water Content (CWC) retrieval algorithm based on W-band radar reflectivity and nearly simultaneous in-situ PSD measurements. The retrieved quantity is then compared to CWC values directly measured by another device installed on the same aircraft to get insights on the errors of the procedure.

The topic is interesting and certainly fits the scope of the Journal, discussing a mea-

surement technique, its application and evaluation. The paper is fairly well written, even if I have the feeling that a carful language check would improve its overall quality. I suggest the publication of the manuscript, after some integration of the text, as indicated below.

In my opinion, the experimental campaign is described too loosely: no information on the scanning (or acquisition) strategy of the 94GHz radar, on the radar sampling volume, compared to the ones of other instruments. Some information on the flight path with respect to the cloud structure should also be given: it can be argued (also from Fontaine et al., 2014) that the flights where through MCS anvils, but at line 5 on page 7 "convective updrafts" are mentioned. How would impact on the method and results the presence of different ice particles, such as graupel or small hail?

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2016-336, 2016.