HAIC-HIWC Science Team Meeting
Toronto, 16-18 May 2016

# High Ice Water Content Research Update (BOM)

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A partnership between CSIRO and the Bureau of Meteorology

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# Update on research and future plans

**Protat et al. (2016)** paper accepted to JAMC
Protat, A., Delanoë, J., Strapp, J.W., Fontaine, E., Leroy, D., Schwarzenboeck, A., Dezitter, F., Grandin, A., and Weber, M., "The Measured Relationship between Ice Water Content and Cloud Radar Reflectivity in Tropical Convective Clouds," accepted*, J. Appl. Meteorology and Climatology..*
→ follow up study will be to apply relationship to Cayenne dataset and assess robustness for the Tropics as a whole.

**Franklin et al. (2016)** paper resubmitted (major comments) → if accepted, the same case study will be used to do more fundamental work to improve high-res version of ACCESS.
C. Franklin has just been hired at the Bureau to work on this.
Franklin, C., A. Protat, D. Leroy, and E. Fontaine, 2016: Controls on phase composition and ice water content in a convection permitting model simulation of a tropical mesoscale convective system. Atmos. Chem. Phys., Re-submitted, April 2016.

Franklin, C., and A. Protat, 2016: Impact of cloud microphysics on the phase composition of a tropical mesoscale convective system. International Conference on Clouds and Precipitation, 25-30 July 2016, Manchester, UK.

**Collaboration with Julien** around radar microphysics: he's doing all the work, I applaud.

# Update on research and future plans

**Surendra Rauniyar** will start HIWC work at 100% in June 2016 (FAA and EASA funding). His main objectives will be to :

- Assist LATMOS+LAMP+BOM work on radar microphysics retrievals, attenuation, validation with Convair, radar comparisons (including pilot radar).
- Statistics of graupel fall speed and IWC from graupel episodes of HAIC – HIWC flights (collaboration with LAMP)
- Build a **composite analysis** of the microphysical properties of HIWC regions as a function of distance to convective cores (Darwin + Cayenne). Satellite products (NASA OT ? RDT ? KNMI HIWC ?) will be used to locate cores and measure distance to aircraft obs. Any suggestions ?

# Worries ? No Worries ?

No news since Melbourne meeting from :

- Alexei's "discovery" paper: once this is out of the way it was agreed that others could start publishing on HIWC microphysics.
- Alfons's BAMS paper: this reference paper only makes sense if it is in the literature before other papers start appearing.
- Walter's J. Aircraft paper: same as BAMS paper.
- Convair datasets ? We agreed on data sharing at Melbourne, and decided to start with CloudSat overpass for many reasons (perfect way to intercalibrate Convair, Falcon, HWL, pilot, and CloudSat radars, easy and interesting paper). That is not happening.
- General worry about collaborations in this project. We have collected pretty unique datasets. But if we are not working together to put the pieces together we will not deliver as much as we should → Could BOM composite analysis suggestion (previous slide) be a good framework ?