

[Interactive  
Comment](#)

## ***Interactive comment on “A microphysics guide to cirrus clouds – Part 1: Cirrus types” by M. Krämer et al.***

**M. Krämer et al.**

m.kraemer@fz-juelich.de

Received and published: 17 November 2015

### **Correction of equation to calculate IWC from PSDs**

On page 31542 (lines 17–20) of our manuscript we introduced the mass-dimension (m-D) relation we use to calculate cirrus Ice Water Content (IWC) from Particle Size Distributions (PSDs), which is a modified version of a relation derived by Mitchell et al. (2010).

[Full Screen / Esc](#)

[Printer-friendly Version](#)

[Interactive Discussion](#)

[Discussion Paper](#)

However, the shown equation is the original from Mitchell et al. (2010):

$$m = a \cdot D^b \quad (1)$$

with

$$\begin{aligned} a &= 0.082740, & b &= 2.814 & \text{for } D < 240 \mu\text{m} \\ a &= 0.001902, & b &= 1.802 & \text{for } D > 240 \mu\text{m} \end{aligned}$$

The relation, modified for ice crystals with  $D < 240 \mu\text{m}$  reads as follows:

$$\begin{aligned} \text{for } D < 10 \mu\text{m} & & \text{crystals are spheres} \\ \text{for } D = 10\text{--}240 \mu\text{m} & a = 0.058, & b = 2.7 \\ \text{for } D > 240 \mu\text{m} & a = 0.001902, & b = 1.802 \end{aligned}$$

For more detail see Luebke et al. (2015).

## References

- Luebke, A., Afchine, A., Costa, A., Meyer, J., Rolf, C., Spelten, N., Avallone, L., Baumgardner, D., and Krämer, M.: The origin of midlatitude ice clouds and the resulting influence on their microphysical properties, *Atmos. Chem. Phys.*, in preparation, 2015.
- Mitchell, D. L., D'Entremont, R. P., and Lawson, R. P.: Inferring cirrus size distributions through satellite remote sensing and microphysical databases, *J. Atmos. Sci.*, 67, 1106–1125, doi:10.1175/2009JAS3150.1, 2010.

Interactive comment on *Atmos. Chem. Phys. Discuss.*, 15, 31537, 2015.

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

