

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

Anonymous Referee #1

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In regards to the review posted on 23 November, one sentence reads "On the other hand, the anvil cirrus category and description in Muhlbauer et al. appears consistent with the description of anvil cirrus in the Cirrus Guide, which places anvil cirrus in the liquid origin cirrus category." This statement is only partially correct. The Cirrus Guide description of anvil cirrus as liquid origin cirrus (having relatively high IWC and Ni) is consistent with the Muhlbauer et al. (2014) to the extent that anvil cirrus in Muhlbauer et al. have relatively high IWC, but Ni (ice particle number concentration) for anvil cirrus in Muhlbauer et al. is not relatively high, with peak Ni for other cirrus categories being higher than the peak Ni for anvil cirrus. Perhaps the IN concentrations in the vicinity of anvil cirrus are generally sufficient to prevent in-cloud RHi levels from reaching the threshold for homogeneous ice nucleation under most conditions (see Cziczo et al.,

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2013, Science), generally limiting Ni to < 500 per liter (Barahona & Nenes, 2009b, ACP).

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

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