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Atmospheric Measurement Techniques Discussions

Interactive comment on "An improved cirrus detection algorithm MeCiDA2 for SEVIRI and its validation with MODIS" *by* F. Ewald et al.

F. Ewald et al.

florian.ewald@campus.lmu.de

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We thank referee 3 for the comments which we address in the following. The referee comments are printed in italics:

Remark 1: An abstract should be as short as possible, and should contain information on the topic, the tools and methods, and results and numbers found. That's it! So, introducing, motivating sentences (first 12-13 lines) should be removed. Motivation is part of the Introduction.

Thank you for this remark! You are absolutly right that our abstract included already parts of our motivation. As suggested, we removed the first 10 lines in our abstract to

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shift the main focus on the topic, the methods, and the results.

Remark 2: Defintion of cirrus was a bit confusing, (for me) too! One specific question (maybe I overlooked this aspect). Can thin cirrus (close to subvible cirrus with COD <0.03) be seen? There are many ice clouds with small COD, 0.05 and smaller.

As evaluation studies of our colleagues with CALIOP have shown, MeCiDA can detect subvisible cirrus with a 50% detection efficiency for COD >0.25.

Remark 3: cloud top = ice top: Does that mean: 100% ice crystals at cloud top? Many altocumulus have extended ice virga, but the 200m deep cloud top region (main cloud layer) contains mostly water droplets with some freshly formed, but immediately large ice crystals! Is this already an ice cloud?

That question is hard to answer, since our retrieval is solely based on the measurement of thermal IR with no in-situ dataset available at a globale scale. From experience, icing signatures are picked up at an early stage by IR algorithms in gernal and as soon as there is a compact ice layer at cloud top this is identified as an ice cloud following our prior definition.

Interactive comment on Atmos. Meas. Tech. Discuss., 5, 5271, 2012.