

## ***Interactive comment on “Calibration of global MODIS cloud amount using CALIOP cloud profiles” by Andrzej Z. Kotarba et al.***

**Anonymous Referee #2**

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This paper identified a new set of cloud fractions corresponding to the four MODIS cloud masks using collocated CALIOP measurements. The author suggested using these new fractions to replace those currently used in the operational MODIS product to decrease uncertainties. Other than global assessments, the author further examined how those fractions changed for different MODIS cloud masking algorithm paths and at different latitude regions. The author recommended using local cloud fractions instead of global cloud fractions. As these cloud fractions are crucial to derive MODIS level 3 cloud products, the author compared the cloud amount differences in level 3 cloud products using new set and operational cloud fractions. It showed that using new set of cloud fractions successfully solved several issues of current L3 cloud product.

This work proposed a new set of cloud fractions to replace the current operational

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cloud fractions in MODIS cloud mask algorithm to improve current MODIS level 3 cloud product. The work is important for cloud climatology community. The reviewer recommended the paper for publication after some minor changes.

Please refer to the attached pdf document for more detailed comments.

Please also note the supplement to this comment:

<https://www.atmos-meas-tech-discuss.net/amt-2020-111/amt-2020-111-RC2-supplement.pdf>

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Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2020-111, 2020.

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