

I. Introduction

Cloud vertical structure (height/pressure/temperature) has become a well studied and often used product from MODIS. It is also a standard product from the VIIRS (Visible Infrared Imager Radiometer Suite) instrument on board the future National Polar-Orbiting Operational Environmental Satellite System (NPOESS) satellites.

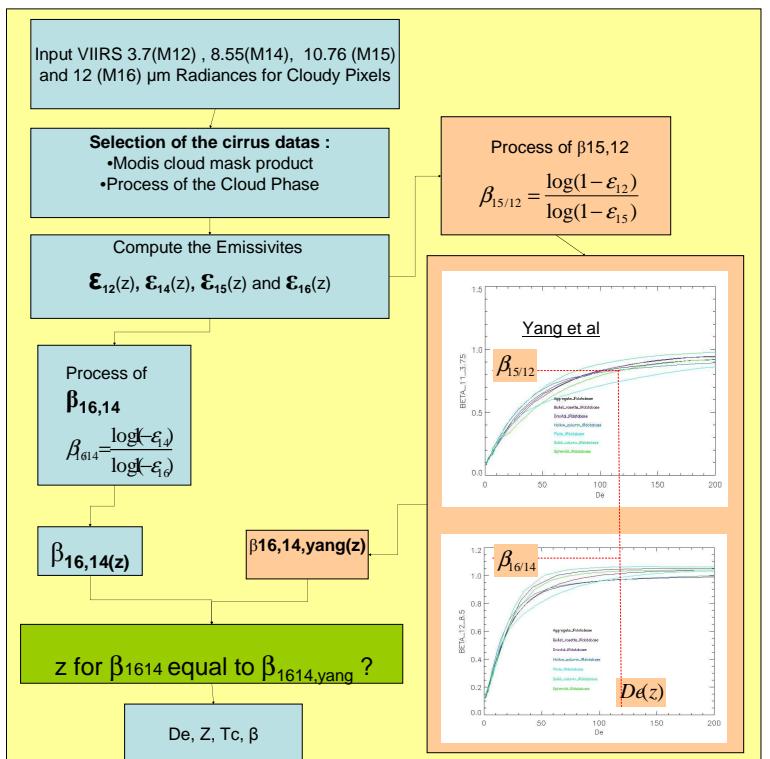
While the MODIS approach to cloud height relies on channels in the 15 micron CO₂ band, the VIIRS night time approach relies on the infrared window channels centered on 3.75, 8.55, 11 and 12 μm.

With the launch of CALIPSO and CloudSat in EOS A-Train, NASA has provided us a new opportunity to evaluate the characteristics of cloud remote sensing from passive instruments.

II. Goals

- Modify the operational VIIRS algorithm using new IR scattering models.
- Compare the modified VIIRS approach to the standard operational VIIRS (Wong et al., 2006) (-> future work !)
- Compare the VIIRS results applied to MODIS data to those from MODIS (MYD06)
- Use CALIPSO to characterize the performance of the VIIRS approach.

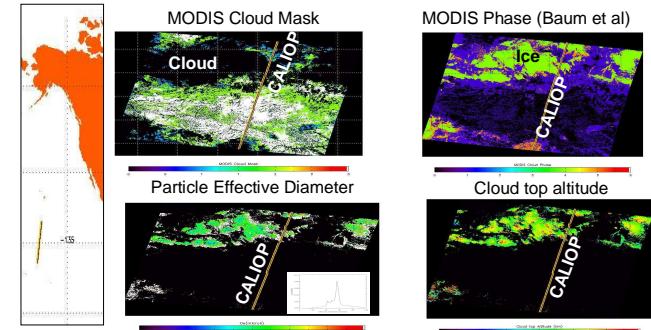
III. Method



IV. Results : Case study

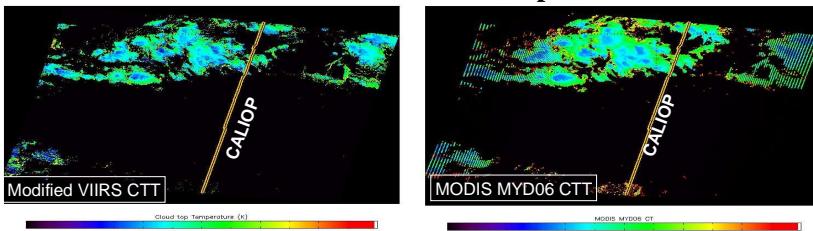
The data used here correspond to the 10 of August 2006 at 12h20 (GMT)

Cloud top Altitude	12.98 ± 2.53 km
Particle effective Diameter	58 ± 14 μm
Cloud top Temperature	217 ± 17 K

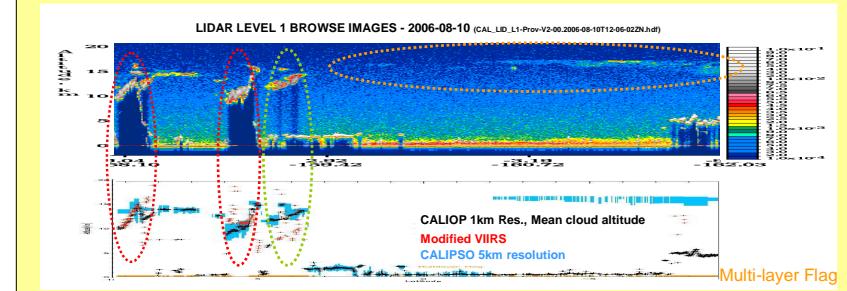


V. Comparisons study

• Modified VIIRS VS MODIS MYD06 product



• Modified VIIRS VS CALIOP



VII. Conclusion and perspectives

- We have explored an implementation of VIIRS approach using new scattermodels.
- We find good correlation, with MYD06 in single layer clouds.
- We find good correlation with CALIOP except for multilayer clouds.
- Next step is to explore the actual VIIRS operational algorithm.

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