MODIS Collection 006 Cloud Optical Properties (06OD) Change Status
OPEN TASKS ONLY

Version 2.11 (12/30/2010)

From M-A C006 Change Document Version 15 (02/18/2009)

Cloud Optical Properties (06OD) Changes: Steve Platnick, Michael King, Gala Wind

AIR, MOD, SIM: CHIMAERA section definitions.

AIR: airborne sensors (MAS and MASTER)

MOD: MODIS

SIM: retrieval code that runs on DISORT simulated radiances/reflectances

		Investigation Begun	Programming Begun	Investigation Completed	Programming Completed	AIR	MOD	SIM	Operational Implemented (I) or Dropped (D) ?
						Chimaera Implemented (I) or Dropped (D) ?			
1.	Integrate low cloud temperature retrievals into the MOD06OD algorithm to include non-unity emissivity (from optical thickness retrieval). (11/06) **Comments & Results:** GW: 12.02.10 – received code from Rich Frey. Will proceed accordingly. A possibility to either modify the CT answer or have another SDS to report the modified Tc and/or Pc	X							
2a	Augment the MOD06 QA to reflect any additional QA bits necessary to represent the changes made to the algorithm. **Comments & Results:** GW-4.1.09: We are definitely going to need at least another byte in the QA array. The values of individual tests will have to go to the QA byte. Additional 5 bits are needed to represent the full multilayer answer and there is not enough space in the current QA array to do anything with that. When we add additional retrievals and such, we'll need more QA anyways. I see the QA array growing to as large as 7 bytes. GW-4.30.09: the QA array has been extended to 7 bytes via CR process. We now have a number of spares in the QA GW- 5.13.09: multilayer individual test QA is now stored in byte 6 of the QA as the first five bits of that byte. With more stuff to be added to this version of MOD06, this QA will get filled in real fast. GW – 5.19.09: At this time we have officially switched to CHIMAERA 6.0.0 – M2.1. The code is no longer able to execute on the old C5 files as the filespec has now changed. This change has been committed to CVS for all the products / processing paths. GW-11.26.10: submitted to Paul a list of proposed QA changes.	X	X	X					
3.	Improve cirrus cloud retrievals of τ_c, r_e								
3c.	Phase Logic (POC: Benjamin Marchant) **Comments & Results:** Comments and Results here.								
4.	Modify table look-up libraries and solution algorithm:								
4d.	Use the Platnick research code – style solution logic to allow solutions when they are just a bit outside of library space **Comments & Results:** Comments and Results here.								
8.	Pursue Aqua cold focal plane adjustment in L1B production. Jack Xiong says Vermote has done something along these lines. (05/08) PEATE testing underway with Bennatz emprical correction **Comments & Results:** SEP – 6.1.09: This addressed the issue that we tried to quantify with the Terra deregistration test. How/if we can better register Aqua is still TBD. If anything is to be done, than yes it's likely/hopefully a L1B action item ... but as the only apparent group interested in an Aqua registration improvement, it is nevertheless an issue we should track.	T	T	T	T	–	T	–	T
11.	Use ecosystem-dependent vegetation and snow/ice thresholds in the multilayer cloud detection algorithm. (01/09) **Comments & Results:** GW – 12.28.09 : this item may just get dropped if I don't get to it before everyone else gets their stuff together. It's not a super-essential change really. I'll look through simulations and see what if anything I can see with this, but besides that, the amount of simulations necessary to determine this may just be prohibitive.								
14.	Examine the effect of interpolated (advected where needed) ancillary data on the retrievals. (01/09) **Comments & Results:** GW-3.3.09. Ran a day science test locally. Aggregation to L3 requested for the day test. The month will be sent to UW for processing. Good impact on the 3.7 µm retrievals, more successful retrievals, better numbers for what was already there. Want to investigate further difference between using the GDAS SST vs Reynolds. Reynolds is a weekly product and I want to know what the behavior is like for the 3.7 µm retrieval.	X		X					

	GW-12.28.09: The data will be interpolated, not advected. Little benefit, greater uncertainty from full advection. Interpolation provides good results. GW: 1.7.10 – will also use spatially and temporally interpolated surface temperature provided by Wisconsin. GW: 12.10.10 – after a conversation with NOAA folks I've reached a decision to drop the use of Reynolds weekly SST product, because the GDAS SST is the same exact algorithm only updated every 6 hours instead of once a week.								

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		Investigation Begun	Programming Begun	Investigation Completed	Programming Completed	AIR	MOD	SIM	Operational Implemented (I) or Dropped (D) ?
18.	Add color tests to CSR to better identify dust vs. thin uniform cloud. (Wind, 02/09) **Comments & Results:** GW –11.26.10: implemented color tests to put the clouds back. Preliminary testing successful. Will proceed to science test 6 shortly.	X	X					–	
21.	Do something with the Statistics_1km SDS. It is currently empty. **Comments & Results:** GW – 5.20.09: Either delete it or fill it in. I vote for 'fill it in' and propagate to all CHIMAERA products. GW – 6.1.09 : As per group meeting discussion. This SDS will be filled in with additional parameters of mean cloud top pressure and temperature for the granule added to the ones already there.	X		X					
24.	Implement correction for atmospheric emission above cloud. This was supposed to have been done in C5, but apparently was never actually implemented as I found out. **Comments & Results:** GW-12.28.09 – Dude, where's my mop? GW:1.7.10 – will use the CKD's directly to get the emission from profile.	X		X					
29.	Retrieval QA is to be set based on the uncertainty values instead of the existing table. **Comments & Results:** GW-12.28.09 – Added as per discussion with Steve on 12.24.09								
30.	New Surface Albedo files **Comments & Results:** comments and results here								
31.	New ice crystal distributions (POC: Bryan Baum) **Comments & Results:** comments and results here								
32.	Retrieve pixels that are normally clear-sky-restored and set the appropriate QA for them, like not useful or something, but report the numbers nonetheless **Comments & Results:** GW-12.28.09 – Added as per discussion with Steve on 12.24.09 GW-6.23.10: implemented, in science test at this moment. Will propagate to MAS and sims code based on the results of science test 5A.2. GW–11,26.10: science test successful. This will be propagated to airborne sensors and struck off this list. GW: 12.02.10 – Will not allow retrievals of dust/smoke/aerosol, but only retrievals of broken/edge clouds.	X	X	X	X		I	–	I

PGE (06OD) General Status as of 12/30/2010

1. CHIMAERA 6.0.0-M2.1 is now available from CVS. Due to filespec changes for all processing paths to reflect C6 improvements the CHIMAERA code will no longer execute over C5 data. CR must be run anew for any and all processing paths that are present or you will be risking some seriously nasty segfaults.
2. CHIMAERA 6.1.0-M2.2 is now available from CVS.
3. All MODAPS-CHIMAERA wrappers are now in place thanks to George Britzolakis from MODAPS. CHIMAERA plays nice with MODAPS system. No problems.
4. CHIMAERA 6.0.13-M2.3 is now available from CVS. We are now keeping the main version number in line with what MODAPS is using as science tests for the operational code are now well underway. You MUST do a clean checkout. You can not do an 'update' because the code structure has been significantly altered.

Science Test Listing, for more details please see the test website

1. Baseline test (includes 1km McGarrah CT code and some minor structural changes) (COMPLETED)
2. New Multilayer algorithm (COMPLETED)
3. DISORT-based C5-style libraries without Cox-Munk (COMPLETED)
4. NISE (that doesn't play nice) (COMPLETED)

5. Cox-Munk libraries (COMPLETED)
6. L1B uncertainty indices as measurement error (IN PROGRESS)
7. GDAS interpolation
8. 3.7um Tc iteration
9. New solution logic (For clouds near/just outside library space)
10. New phase algorithm
11. New ice libraries (roughened or not or whatever)
12. New surface albedo
13. CSR color tests