ORAC meeting minutes 31st March 2009 RAL

Present: Don Grainger, Andy Sayer, Gareth Thomas, Elisa Carboni, Chris Arnold, Haiyan Huang, Caroline Poulsen, Richard Siddans, Barry Latter

1. Minutes of previous meeting

2. Report from GlobCloud meeting. Meeting was well-attended and GRAPE results went down well. Modellers interested in datasets they can simulate or directly compare, e.g. measurements rather than retrievals. Cloud water path also a useful parameter to compare. Cloud fraction has no explicit definition (different sensitivities of different instruments) so less useful to compare. Some datasets to look at: PATMOS-X (AVHRR clouds), GOME cloud products (Diego Loyola), microwave oceanic cloud water path (Chris O'Dell). GlobCloud ITT to come out in May for kickoff late summer. Some discussion about consortium partners.

3. Johannes Quaas aerosol indirect effect. Johannes is preparing a paper looking at correlations between aerosol optical depth and cloud properties (water cloud cover, cloud-top temperature, cloud droplet number concentration and liquid water path). He is using a selection of models, as well as MODIS Aqua and Terra data, and has added GRAPE into it. He has not been using the fixed version 3 of GRAPE so Andy is checking and adding to his analysis.

4. Status of GRAPE/GEWEX. The GEWEX dataset is almost ready (2 weeks maximum).

5. GRAPE cluster.

    – Barry reported there are some issues with power and space in the computer room at RAL. The expedient measure is to hold onto the current cluster until AATSR processing is complete.
    – The new disk for the GRAPE cluster has not arrived yet; Andy to chase up.
    – A FORTRAN compiler and HDF libraries will be installed on the GRAPE machines to enable the code to be edited—currently the FORTRAN cannot be successfully recompiled and run on it.
    – The other issue arising with GRAPE is the lack of LUTs for AATSR; Andy will investigate the impact that using ATSR-2 LUTs for now will have. Richard/Caroline have code to generate new LUTs but we can't regenerate the existing ones, so we could compare a new set to see how similar they are.

6. Student progress:
    - Chris has been finishing off preparation of the GEWEX dataset and hopes to be done within a fortnight. He has been making some progress with spline LUT interpolation but has run into a few problems; Andy will help him with this.
    - Haiyan presented some work on the relationship between remote oceanic aerosol optical depth and wind speed. She will be giving it as a talk on Thursday at the ADIENT meeting in Manchester.

7. Sea surface reflectance model update. Andy has created some code to give a better a priori surface albedo in the aerosol retrieval: the glint contribution is pre-calculated and read in from a LUT. This is being tested. Previously the albedo was too low; preliminary results now suggest that the fix decreases oceanic optical depth (from a bit over 0.1 to a bit under 0.1) and increases the albedo (0.04-0.06).

8. Bug in forward model expression (solar zenith angle factor in surface). Andy has been

investigating a possible bug in the BRDF aerosol forward model involving a missing factor of the cosine of the solar angle in the surface-atmosphere terms. This is thought to have appeared in the conversion from a Lambertian to a BRDF model. He is still looking into this. Richard has since shown that the SEVIRI version of the code does not have this problem—Gareth to check the GlobAerosol code. May just be an issue with Andy's code.

9. Publications:
   - Aerosol algorithm (GRAPE). Gareth has submitted this to AMT Discussions.
   - Aerosol validation (GRAPE). Some progress.
   - GlobAerosol (for RSE). No progress yet.
   - Cloud algorithm (for RSE). Some progress.
   - Cloud validation. No progress but a lot of the GEWEX stuff will be useful.
   - Land surface/Amazon time series (for RSE): Planning to reprocess dataset but want to get to the bottom of possible retrieval bugs first. Have downloaded ancillary data, should be ready to begin processing by the end of the month.
   - DRI: No progress.

10. Next meeting: Tuesday 21st April, 10 am, Brewer Room, Oxford.