Data merger session
January 30, 2001

Chairman: Andre Morel

1 Notes on data merging activities:

Robert Frouin presented IOCCG discussion and recommendations on data merger applications. IOCCG supports:
1. Monthly climatology,
2. Time series.

Some participants doubted the purpose and usefulness of climatological data sets. Robert's and Chuck's justifications for the product included:

1. Usefulness for running a variety of models and having a reference data set to compare to when looking at inter-annual anomalies.
2. SeaWiFS data set is biased by El Niño/la Niña phenomena.
3. The SeaWiFS Project has in house OCTS GAC data which can be used for this exercise as well.

Dave Siegel: need to merge data sets to obtain the highest spatial and temporal resolution possible.

Janet Campbell/Andre Morel: Discussion about standardization of ocean color level 3 binning formats. The subject was postponed because there is an IOCCG committee led by David Antoine which is going to work on this subject.

Andre Morel: Level on which ocean color data could be merged:

1. Level 3 chlorophyll,
2. Level 2 nLw,
3. Radiances on the top of the atmosphere.

Andre Morel: Argued the usefulness of merger of the radiances on the top of the atmosphere because the result can be useful for radiative budget studies. Nevertheless, the idea was not pursued.

Dave Siegel: Proposed to merge level 2 nLw data. The participants of the meeting endorsed the proposal. Janet Campbell also advocated to merge AOTs, which was affirmed.

Andre Morel: From merged nLw values chlorophyll levels could be derived using a "certain" algorithm and these levels could be compared against level 3 merged chlorophyll.

Dave Siegel: The merger would be done to produce daily products only. Then, the binning process could be done whichever way would be convenient or recommended by the IOCCG committee. However, in the meantime the climatological data set will be produced.

IOCCG concerned about level of effort and SIMBIOS Project resource limitations.

Recommendations:

SIMBIOS Project will write to the IOCCG concerning accelerating the data merger activities. SIMBIOS Project will wait for IOCCG working group on merger issues: different days in a "week', binning resolution (temporal & spatial), binning algorithms, etc.

SIMBIOS and IOCCG should develop a set of data merger goals and objectives which are linked to applications, e.g., model data assimilation.

SIMBIOS Project will generate a chl-a climatology, initially from SeaWiFS and OCTS. Particularly useful for deriving products.

SIMBIOS Project will start merging at the daily level, merging daily MODIS and SeaWiFS to increase spatial resolution. Merging should be done for Lwn, chl-a, and aerosol optical thicknesses. In some instances, Lwn's will need to be be transformed to adjacent wavelengths when the standard bands are not matched. Chl-a should also be derived from merged Lwn's for comparison with merged chl-a at least initially.

2 Notes on data gaps:

KOMPSAT will consider focusing some fraction of their coverage on tropical oceans to increase coverage where MODIS coverage is reduced by sun glint for future incorporation into a merged data. The SIMBIOS Project will assist the OSMI science team in implementing a glint correction scheme. Note: OSMI does not tilt.

Watson Gregg: is going to look at the orbit gaps in SeaWiFS/MODIS daily coverage to advise the OSMI Team on scheduling their coverage.

Brian Franz: later raised the problem of possible OSMI sun glint contamination within these gaps.

The ROCSAT OCI data could also be used for improving tropical coverage and an evaluation should be conducted to determine the feasibility of doing so.
Idea to fill up the gaps in SeaWiFS/MODIS daily data coverage with other sensors such as the Korean OSMI and the Taiwanese OCI.

Recommendation:

The SIMBIOS Project will write a letter to the Korean space agency outlining its collaboration with the OSMI science team.

SIMBIOS Project will write to ROCSAT OCI to provide this data.

<u>3 Notes on diagnostic data set</u>:

Janet Campbell led a discussion on modification of the IOCCG-proposed set of diagnostic sites for which ocean color data would be collected from different sensors for evaluation of atmospheric and bio-optical algorithms. Each site was prioritized on a scale from 1 to 3, 1 for MOBY, 2 for continuing data series, 3 for all other sites.

Recommendation

Prior the implementation of the diagnostic data set, the Project set conditions: for each site is to have its own investigator – a person interested and able to collect in situ data and perform some kind of studies for the area. All AERONET/SIMBIOS sites would be included. The problem was not solved regarding the size of each site. The site investigators would need to check on exact coordinates of their site and suggest the standard size.

SIMBIOS will post the revised diagnostic data set on their web page. Janet and Tanaka will coordinate with IOCCG, MODIS, MERIS/ESA and NASDA. SIMBIOS, before generating SeaWiFS and MOS versions, will run a "test set" using the OCTS GAC data and expects PIs to comment on it.