S3E1

Integrating in situ data and satellite ocean-colour towards improved estimation of marine autotrophic-carbon stock

Shovonlal Roy

Department of Geography and Environmental Science & The School of Agriculture Policy and Development, University of Reading, Whiteknights, Reading RG6 6AB

Email: shovonlal.roy@reading.ac.uk

The autotrophic-carbon stock in the ocean is responsible for almost half of the annual global carbon fixation, and is fundamental to the global carbon cycle. However, an accurate estimation of this carbon stock on a global scale is a non-trivial task. This presentation will deal with some recent developments in this direction. It includes integration of in situ data and satellite-remote sensing through (i) development of novel bio-optical algorithm combining allometric relationships and light-absorption properties of phytoplankton, and (ii) implementation of data assimilation using biogeochemical model, to provide independent estimates of carbon stocks in marine autotrophs (phytoplankton) partitioned into various size classes. The importance of the approaches will be discussed in the context of minimizing uncertainties in phytoplankton-carbon estimates by satellite algorithms and marine ecosystem models.

Oral

- **Integrating In-situ / satellite data sources**