

Status of TODWL and Other IPO Funded Activities.

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Abstract

Imminently scheduled field experiments with TODWL will target ocean surfaces with Doppler lidar. TODWL will measure reflection as a function of incidence angle, sea-state, etc. A major goal is to learn how to discriminate between near surface aerosol and the underlying surface. Many as five distinct types of motion are likely to occur in the lowest range gate. Atmospheric PBL roll circulations will be explored. Finally, it is intended to evaluate TODWL using "comparisons of opportunity" (COOs).

The TODWL team plans to accumulate about 25 hours of total flight from Feb 10-15, 2002 near Monterrey, CA and to fly low and slow to ensure surface signal at multiple incidence angles. Dropsondes will be used for intercomparison as well as COOs. The drop system was installed and is scheduled for check out during the last week of January 2002.

After the Monterrey experiment, the lidar will be shipped to CTI, where it will be installed in a trailer, and then sent back to Charlottesville. It will be available for use in other missions (with Goddard Lidar Observatory for Winds (GLOW) for example.)

IPO-funded efforts on the NCEP OSSEs.

The impact assessment of simulated DWL bracketing is now yielding results. Included in the OSSEs are simulated cloud track winds (CTW), which needed to be added for a more realistic control in future OSSEs. The University of Wisconsin's CTW group has evaluated and approved the simulated CTWs. All of the Simpson Weather Associates simulated products will also be used in the new NASA/DAO OSSEs.

The "rapid response" OSSEs (RROSSEs) are undertaken for the GTWS requirements development. These make use of the same data assimilation front end as the full OSSE, but simplified, prescribed flow features. RROSSEs have been applied to address the need for bi-perspective sampling and the effect of angle between two looks in framing GTWS requirements. Future work includes a RROSSE to explore the trade between accuracy and representativeness. In addition, there are plans to investigate adaptive targeting of DWL observations via numerical experiments in collaboration with Zoltan Toth and Eugenia Kalnay.