Air/sea energy exchange using TODWL and a towed platform (Unified Physical Parameterization Project). G. D. Emmitt, K. Godwin, Simpson Weather Associates Inc. (USA); and R. Foster, University of Washington (USA).

ABSTRACT

Over the last few years, the Office of Naval Research has funded several experiments related to using an airborne Doppler Wind Lidar to study the Marine Boundary Layer. More specifically, the investigations have focused upon the role of Organized Large Eddies (OLEs) and Low Level Jets (LLJ) in augmenting the transfer of momentum and energy between the atmosphere and the ocean surface. Recently, the Navy's Twin Otter Doppler Wind Lidar (TODWL) has been used together with a towed platform to achieve in situ flux measurements at flight level and near surface level at the same time the lidar is scanned to map the aerosol and wind structures between (and above) these two levels.

This paper will describe the TODWL system and the towed platform and will discuss in some detail how the two systems work together. Examples of the data collected by the TODWL system along with flux measurements will be presented.