

Session #17
Invited
Oral

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**WIND FIELDS OVER THE GREAT LAKES MEASURED BY THE QUIKSCAT/SEAWINDS
SCATTEROMETER.**

The objective is to investigate the use of satellite scatterometry for daily mapping of wind fields over the Great Lakes. Data have been acquired over the Great Lakes since 1999 by the SeaWinds Scatterometer on the QuikSCAT satellite (QSCAT). From QSCAT data, surface wind vectors are derived over the lakes as a special product with a resolution of 12.5 km compared to the standard QSCAT wind retrieval product at 25-km resolution. With the higher resolution, the special QSCAT wind field grid is sufficient to represent the wind field over the Great Lakes. The National Oceanic and Atmospheric Administration (NOAA) Great Lakes Environmental Research Laboratory (GLERL) produces nowcast wind fields (objective analysis of point measurements by buoys and other in-situ instruments), which are used to compare with QSCAT results. We obtained wind fields over all Great Lakes before, during, and after storms. QSCAT and nowcast results compare well in general. Furthermore, QSCAT can provide extensive and consistent results over the Great Lakes on the daily basis without relying on point measurements from buoys (which are taken out of the lakes before every winter season to avoid damages caused by ice). The mapping results are useful for marine resource management, lake fisheries and ecosystem studies, Great Lakes climatology monitoring, lake wind and ice forecast, and ice cover/wind information distribution. The follow-on SeaWinds Scatterometer was successfully launched on the ADEOS-II Satellite on 14 December 2002. Past, present, and follow-on satellite scatterometers will provide long-term data for Great Lakes wind mapping.