

BOEM ENVIRONMENTAL STUDIES PROGRAM: ONGOING STUDIES

BOEM OCS Region: [Gulf of Mexico](#)

Planning Area: Central and Western

Title: Operations of the BOEM's Radar Wind Profiler/RASS at the Houston Coastal Center (GM-06-x14)

Total Cost: \$245,835

Period of Performance: FY 2006 – 2012

Conducting Organization: University of Houston

BOEM Contact: [Dr. Chester Huang](#)

Description:

Background: The University of Houston's Coastal Research Center (UHCRC) near Galveston Texas is located approximately 14 miles northwest of the Gulf of Mexico, making the UHCRC an ideal facility to study a range of coastal meteorological phenomena including; land/sea breeze circulations, low-level jets, nocturnal inversions, and the formation of fog, and the impacts of these meteorological phenomena on air quality. The Center currently has a suite of meteorological instrumentation installed, a 42-meter (m) micrometeorological tower, a medium range SODAR, a 10-m air quality tower, and soil and radiation instruments. Together, these instruments provide continuous measurements of atmospheric conditions and air quality in the Texas coastal environment. The Center is lacking one instrument to complete the data gathering to better understand the three-dimensional dynamics of important meteorological features, such as the depths of the sea breeze layer and the maximum nocturnal jet velocity that occur above the 42-m tower layer, and beyond the maximum vertical range of the SODAR. The deployment of the BOEM radar wind profiler/RASS would fill this data gap and complete the boundary layer measurements at this site. The data gathered with the radar profiler will further research and understanding of vitally important meteorological regimes and their effects on air quality in the non-attainment areas of the Texas coast.

Objectives: Update and enhance existing data to better understand complex coastal meteorology used to assess OCS impacts to onshore air quality.

Methods: The radar wind profiler is capturing; vertical winds, temperature, and mixing height data. The study provides funds for the cost of shipping, installing and maintaining and de-installing and shipping the equipment at the close of the cooperative agreement. The University of Houston will collect the data and make it available in near real-time to BOEM, the State of Texas and the general public on the internet. The data, when used for research, will be quality assured and synthesized with other data for analysis of coastal meteorological phenomena impacting onshore air quality.

Products: Quarterly and Final reports.

Importance to BOEM: The radar wind profiler data will complement other data along the Texas coast and will provide significant benefit to ongoing and future BOEM air quality, meteorological, and oceanographic studies by providing more accurate data as inputs to BOEM and Gulf coast states air quality modeling, used for OCS onshore air quality impacts assessments.

Current Status: Extension granted. Pending.

Final Report Due: December 2011

Publications: None

Affiliated WWW Sites: <http://www.imaqs.uh.edu/ftp/rwp/LAPXMDATA/html/rwp.htm>

Revised date: February 2012

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