

Abstract Submitted
for the DFD16 Meeting of
The American Physical Society

Seasonal variability of atmospheric surface layer characteristics and weather pattern in Qatar¹ DHRUBAJYOTI SAMANTA, WAY LEE CHENG, REZA SADR, Texas AM University at Qatar — Qatar's economy is based on oil and gas industry, which are mostly located in coastal regions. Therefore, better understanding of coastal weather, characteristics of surface layer and turbulence exchange processes is much needed. However, the turbulent atmospheric layer study in this region is severely limited. To support the broader aim and study long term precise wind information, a micro-meteorological field campaign has been carried out in a coastal location of north Qatar. The site is based on a 9 m tower, installed at Al Ghariya in the northern coast of Qatar, equipped with three sonic anemometers, temperature-humidity sensor, radiometer and a weather station. This study shows results based on the period August 2015 to July 2016. Various surface layer characteristics and modellings coefficients based on Monin Obukhov similarity theory is studied for the year and seasonal change is noted. Along with the seasonal variabilities of different weather parameters also observed. We hope this long term field observational study will be very much helpful for research community especially for modelers. In addition, two beach and shoreline monitoring cameras installed at the site could give first time information on waves and shoreline changes, and wind-wave interaction in Qatar.

¹An Preliminary Analysis of Wind-Wave Interaction in Qatar in the Context of Changing Climate

Way Lee Cheng
Texas A
M University at Qatar

Date submitted: 01 Aug 2016

Electronic form version 1.4