Abstract Submitted
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Turbulent characteristics analysis of atmospheric surface layer in coastal region of Qatar YUAN LI, REZA SADR, Texas AM University, College Station — The turbulence characteristics in coastal region of Qatar are analyzed. The micrometeorological data is collected in the coastal site at (26.08N, 51.36E) by three sonic anemometers located on a 9 m height tower from September 2015 to August 2016. The friction velocity, Obukhov length and the normalized variance of wind components and temperature are studied within the framework of Monin-Obukhov similarity theory. During the 1-year measurement period, 33% of data are characterized as stable. The normalized variances are in agreement to empirical fits from other reported values under both unstable and stable atmospheric stratification. However, the normalized variance of stream wise and transverse velocity at near-neutral condition is slightly higher than other observations while the normalized variance of vertical velocity is slightly lower. The measured wind components and temperature in the surface layer shows the sea breeze circulation. The diurnal pattern characteristics in the coastal region is also analyzed for the onshore and offshore breeze.

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