Atmospheric Sciences 5270
Wind Power Meterology
Exercise 2

This is an extension of Exercise 1 and deals with characterizing the observed wind resource. You will need to read Chapter 10 of the Wind Resource Assessment Handbook to complete the assignment.

You will complete a Matlab program and use it to calculate wind statistics from one year of 5-minute measurements from selected Oklahoma Mesonet stations. A template program is on the class web page `http://www.inscc.utah.edu/~krueger/5270/`.

1. Extend your program from Exercise 1 to calculate these additional statistics, as listed in the template program:
   (a) wind power density frequency distribution for each station (plot),
   (b) maximum wind speed frequency distribution for each station (plot),
   (c) wind direction frequency distribution for each station (plot),
   (d) mean annual wind speed for each direction (plot),
   (e) mean annual wind power density for each direction (plot),
   (f) mean hourly wind speed versus hour of day for each month and for each station (plot).