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ATMO 529

HW 1

DATA WEBSITE SUMMARY

An excellent repository for local Tucson air quality data is operated by the Pima Department of Environmental Quality (PDEQ) under the title Air Info Now (<http://www.airinfoNOW.org/html/data.html>). It gives present and historic Air Quality Index (AQI) reports which are a weighted score of how poor the air is due to particulates, ozone, carbon monoxide and nitrogen dioxide. Of special importance to me is the particulate matter (PM) data, which is useful in monitoring dust storms and validating dust storm models with in-situ observations. PM is *usually* synonymous with airborne dust (although this vague distinction leads to modeling problems!) Two size ranges (PM10 and PM2.5) are regulated by the EPA as per the National Ambient Air Quality Standards (NAAQS) and are measured at several sites around Tucson. PM10 is the recorded/collected mass concentration of all particles below a diameter of ten microns. The same naming style applies for PM2.5. The data here is presented in the general air quality mass concentration unit: a microgram per meter cubed ($\mu\text{g}/\text{m}^3$). The data is usually recorded every hour in near real time. Occasionally sensors malfunction or have biases, but there are special codes in the data tables that reveal these as faulty data points. It is usually possible to access the previous day's PM data and plot the time series as a bar chart for each station. The data lacks any information on precision and accuracy errors, and is only given to the first decimal place or often just as an integer value.