* Three levels of atmospheric dynamics (sorted in order of spatial and temporal resolutions required for proper capture): (1) large-scale winds, (2) smaller-scale turbulence, (3) flux (?). **Our goal is to calculate the large-scale 3-d wind vector** .
* is derived using the following procedure:
* In order to yield accurate , and in order to have a good idea regarding the uncertainties and errors associated with , we must pay careful attention to how we are measuring and treating the data at each step of the above procedure.
  + For instance, all data (e.g. static temperatures, static and dynamic pressures, etc.) come in as raw, uncalibrated data, and possess an associated measurement/instrument error that must be carried forward through to our calculations.
  + Data must be calibrated/corrected before it can be used further. For instance, static pressure probes ideally ought to measure -- that is, the static pressures at that point in atmosphere undisturbed by the aircraft. However, static pressure readings are influenced by airflow around the plane, and that airflow varies across the craft => static pressure readings across multiple independent instruments differ. To correct for this variation in position that ideally ought not to exist, we must calibrate for *position error*.
  + An aside: apparently data given has been processed to have all their sampling rates equal 1Hz. Investigate the technique used for this
* possesses inputs , , , , and . is a function of and . and are constants (but apparently possess gas and temperature dependencies), so let’s start off with a treatment (i.e. processing, calibrations, error-handling, etc.) of static and dynamic pressures:
  + Convair-580 possesses x5 independent sensors for measuring static and dynamic pressures
  + All 5 sets of readings must be corrected for position error (pre-dominant)
  + To derive other correction techniques, will be useful to see how instruments respond to varying aircraft (and environmental?) state. This analysis might be useful as a way of excluding certain instruments (in the calculation of ) during certain flight maneuvers
  + Consider: after all necessary corrections have taken place, perform data/sensor fusion to yield one reading for both static and dynamic pressures (with associated error and uncertainty attached).
  + Reliability of instruments ought

must visualize how instruments respond in different environmental conditions and different aircraft state, -> data/sensor fusion to yield most ONE static pressure reading, ONE dynamic pressure reading to be used in calculations, with associated error and uncertainty

Why linear?

Flag method for removing outliers (run tests)

Approach (question): by atmospheric condtion (smooth, clean), analyzed over separate aircraft maneuver types (e.g. orbits) … is this the right way to proceed?

How common are orbits?