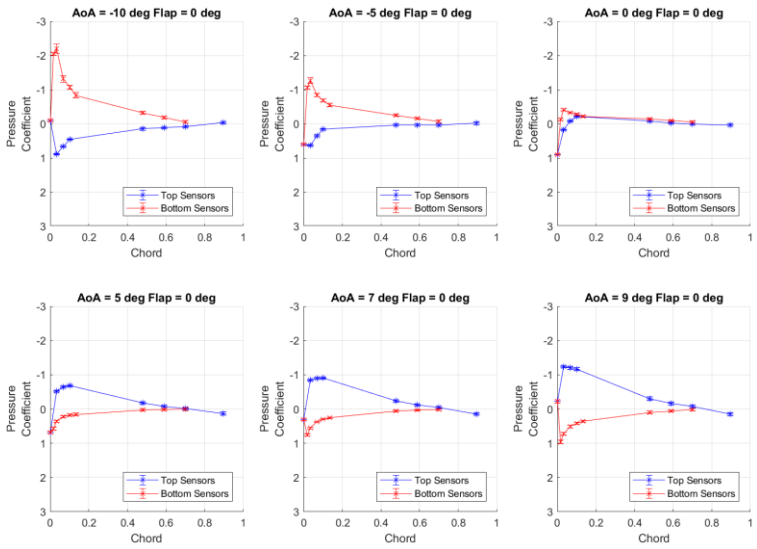
AVDASI 2: Wings Experimental Data 2022-23

Pressure Data

- Data from Acquisition system is in Pascals.
- Converted to Coefficient of Pressure using:

$$C_p = \frac{P}{1/2\,\rho v^2}$$

- Maximum, Minimum and Mean have been tabulated – Allows plotting of error bars.
- Plots are expected to look similar to these:



WINGS – Load Cell Data/Aerodynamic Coefficients

- Processed to give C_l, C_d and C_m for each of the angles of attack and flap configurations for each wing.
- The data is taken from BOTH load cells.
- The drag of the rig has not been removed from the C_d data.
- The coordinate system has been adjusted when calculating the coefficients to take into account the rotated load cell (load cell 2).
- We have assumed all readings are taken at Sea Level 15°C.
- $\rho = 1.225\ \mathrm{kg/m^3}$
- Hence we have not corrected for pressure variation (Queen's Building is approximately 68m above sea level).
- The 0 wind, angle of attack sweep data has been subtracted from the readings to account for any change in axis loads due to the mass of the wing.