

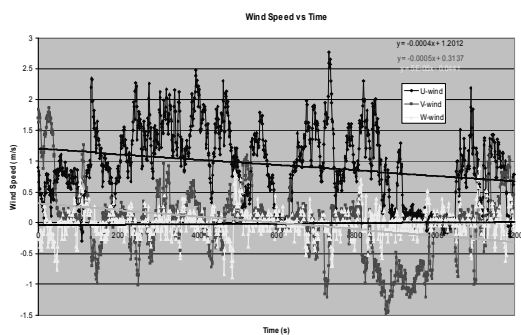
# Comparison of Eddy Covariance Results

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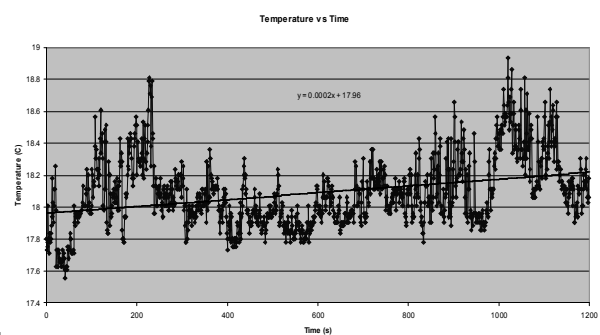
## Comparison of Eddy Covariance Results

	Group	
	A3	A4
$\overline{U'W'}$ ( $m^2s^{-2}$ )	-0.026	-0.031
$\overline{T'W'}$ ( $Kms^{-1}$ )	0.012	0.016
$U$ ( $ms^{-1}$ )	0.16	0.18
$Z_0$ (m)	0.29	0.34
$\tau$ ( $Nm^{-2}$ )	0.031	0.038
$H$ ( $Wm^{-2}$ )	13.95	20.06
$\sigma_u/\bar{U}$	0.654	0.59
$R_{uw}$	-0.074	-0.21

## Graph of Wind speed Vs Time



## Graph of Temperature Vs Time



## Interpretation of Results

- Low values of Friction Velocity ( $U$ ) indicate a low impedance of mean flow due to turbulence.
- Little effects of small scale turbulence. ( $U'W'$ )
- Capacity of air to transport heat is low because the eddies are small. ( $T'W'$ )
- Low intensity of turbulent eddies/gusts ( $\sigma_u/\bar{U}$ ).
- Low surface momentum flux due to small weak eddies ( $\tau$ )
- The sensible heat flux ( $H$ ) value is low due to moisture content of the surface and weather conditions during the IOP.
- Roughness Length ( $Z_0$ ) higher than expected.
- Low effect on momentum diffusion via turbulence ( $R_{uw}$ ).

## Differences Between Results

- Generally small deviations between the two sets of results.
- Siting of the masts
- Different instrument errors
- Small eddies affecting masts individually
- Few seconds difference in starting times

## Assumptions Made

- Flux in the surface layer is constant with height.
- Averages are appropriate for parameters calculated. (i.e. large range of H values both positive and negative)



## Instrumental Effects/Problems

- Time response of instruments
- Threshold velocity of anemometers (instrument stalling)
- Possible fluctuations between sampling points

