

Experiment 3 – Profile method      16-June-2008      John Lally.

Group **A1** Results

**Comment [RJH1]:** For detailed results from the other profile mast, see the powerpoint talk of group A1

Parameter	Symbol	PRT Value	Mercury Value	Units
Friction Velocity	$U_*$	0.116	0.110	$ms^{-1}$
$T_{star}$	$T_*$	0.116	0.077	$^{\circ}C$
Sensible Heat Flux	$H$	16.21	10.22	$Wm^{-2}$
Momentum Flux	$\tau$	0.016	0.015	$Nm^{-2}$
Obukhov Scale	$L$	-8.517	-11.57	<b>m</b>
Gradient Richardson Number	$Ri$	-0.56	-0.086	-
Roughness Length	$Z_0$	0.030	0.027	<b>m</b>
Temperature Difference	$T_{(2m)} - T_{(0.2m)}$	-	-0.329	$^{\circ}C$

**Comment [RJH2]:** This seems rather high: it could be that it was calculated using theta0 in Celcius rather than Kelvin

Monin Obukhov vs Ri number for groups A1 and A2:

	L (m)	Z (m)	Ri	$\zeta$
A1 PRT	-8.517	1.56	-0.56	-0.184
A2 PRT	-13.69	1.56	-0.162	-0.114
A1 mercury	-11.57	0.615	-0.086	-0.0532
A2 mercury	-19.29	0.615	-0.356	-0.032

**Comment [RJH3]:** This number also seems rather high

Z in the chart above is the geometric mean height obtained from top and highest and lowest z for each thermometer type.