Abstract

Substitute " ...was an escarpment" by "...was the escarpment facing westerly winds"

2. Experimental setup

2.1. WindEEE experimental setup

2.1.1. WindEEE facility

Too many indexing levels without text. You should be able to write something just after section 2. and subsection 2.1.

Please check the whole text.

Page 8, line 30

"...used by Berg et al. (2011) to calculate friction velocity using data from the upstream reference mast M0 in the Bolund field campaign". Please indicate at which height.

Page 9, lines 15-20

About the discussion on aerodynamic roughness length, z_0, for RC1 and RC2 cases, you should indicate that RC1 tests are well within the fully rough regime since $u_* z_0 \nu^{-1} \gg 1$ (so no dependence of z_0 on u_* is expected), whereas RC2 tests are in the smooth regime since $u_* z_0 \nu^{-1} < 0.2$, considering Bowen (2003), so dependence of z_0 on $u_*$is expected. As well as in the case of BLWTL test which is in the transitionally rough regime. Providing some results for the friction Reynolds number in this section is convenient.

Page 10, lines 15-20

Similarities with inflow profiles in Yeow et. al (2015) are expected since u_*values are of the same order and z_0 values are almost the same in both studies (Yeow et al. 2015 and the present one).

Page 10, lines 25-30

Providing statistics (i.e. number of occurrences of instantaneous values $u(t) < 0$) for a given set of PIV images pairs) as in Yeow et al, 2015 would provide some insight on the statistical significance of instantaneous inverse flow ocurrence.

Page 14, lines 25-30

It is evident that U15 cases (both RC1 and RC2) present the best fit to full-scale data both in terms on S/S_0 and $\Delta\overline{k}$ at M6 (mainly at 2m a.g.l). This is one of the issues pointed out in previous works. The difference in S/S_0 and $\Delta\overline{k}$ PIV patterns between U14RC1 and U15RC1 are evident. The difference in the setup of the wind tunnel fans between U14 and U15 cases is also clear, but there has not been identified any significative difference in the studied non-dimensional inflow parameters.

The differences in S/S_0 and $\Delta\overline{k}$ at M6 (mainly at 2m a.g.l) are unlikely justified by the small change in Reynolds number, Re_h between U14 and U15 cases. The difference in the ratio h/z_0 is neither the cause of the significantly improved match for cases U15 (both RC1 and RC2).

The question is, which are the relevant non-dimensional inflow characteristics that are affected by the difference in the wind tunnel fans setup between U14 and U15 cases, and that affect S/S_0 and $\Delta\overline{k}$ at M6 (mainly at 2m a.g.l)?. Have you checked the vertical inflow profiles for $\overline{uw}(z)\, u_{*05}^{-1}$ and integral length scales $L_{u_i}^{x}(z)\, h^{-1}$?. Are there any difference between U15 cases and the other ones for these paramaters?.

Page 19, table 1

Full scale data should be included.

References

Bowen, A. J., 2003. Modelling of Strong Wind Flows over Complex Terrain at Small Geometric Scales. Journal of Wind Engineering and Industrial Aerodynamics 91, 1859–1871.