

This study measures temperature differences between two parallel actively heated fiber-optic cables with microstructures to further determine the wind direction. The study fits the scope of *Atmospheric Measurement Techniques*. The authors have addressed most of my previous comments. However, I still have one major concern.

Major comments

(1) There are unclear places in the derivation of equation (6) from equation (3).

Equation (3)

$$Q_h = \rho u_*^{1-m} c_p (T_a - T_s) \alpha^{-1} \left(\frac{h}{v}\right)^{-m} Pr^{-n}$$

The above equation leads to

$$Q_{left} - Q_{right} = \rho u_*^{1-m} c_p \left(\frac{h}{v}\right)^{-m} Pr^{-n} \left[\frac{(T_a - T_{left})}{\alpha_{left}} - \frac{(T_a - T_{right})}{\alpha_{right}} \right]$$

Assuming $Pr = 1$, the above equation is reduced to

$$\frac{Q_{left} - Q_{right}}{\rho c_p \left(\frac{h}{v}\right)^{-m}} u_*^{m-1} = \frac{T_a}{\alpha_{left}} - \frac{T_{left}}{\alpha_{left}} - \frac{T_a}{\alpha_{right}} + \frac{T_{right}}{\alpha_{right}} = \frac{T_{right}}{\alpha_{right}} - \frac{T_{left}}{\alpha_{left}} + \left(\frac{1}{\alpha_{left}} - \frac{1}{\alpha_{right}} \right) T_a$$

Assuming $\alpha_{left} \ll \alpha_{right}$, i.e., $\frac{1}{\alpha_{left}} \gg \frac{1}{\alpha_{right}}$ if $\alpha > 0$, the above equation is reduced to

$$\frac{Q_{left} - Q_{right}}{\rho c_p \left(\frac{h}{v}\right)^{-m}} u_*^{m-1} = \frac{T_{right}}{\alpha_{right}} - \frac{T_{left}}{\alpha_{left}} + \frac{T_a}{\alpha_{left}}$$

However, $\alpha_{left} \ll \alpha_{right}$ does not lead to $\frac{\alpha_{right}}{\alpha_{left}} \approx \frac{1}{\alpha_{left}}$ (this is the assumption in the author's response), unless $\alpha_{right} \approx 1$ is assumed.

Even if $\alpha_{right} \approx 1$ is assumed, the above equation is reduced to

$$\frac{Q_{left} - Q_{right}}{\rho c_p \left(\frac{h}{v}\right)^{-m}} u_*^{m-1} = T_{right} - \frac{T_{left}}{\alpha_{left}} + \frac{T_a}{\alpha_{left}}$$

Please show how to derive from the above equation to equation (6), i.e.,

$$\frac{Q_{left} - Q_{right}}{\rho c_p \left(\frac{h}{v}\right)^{-m}} u_*^{m-1} = \frac{1}{\alpha_{left}} \frac{1}{\alpha_{right}} (T_{left} - T_{right})$$