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CORRIGENDUM

New scaling laws for turbulent Poiseuille flow with wall transpiration – CORRIGENDUM

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In the present corrigendum, we correct a figure and data from the direct numerical simulation (DNS) on the Poiseuille channel flow with wall transpiration, published in Avsarkisov, Oberlack & Hoyas (2014). These corrections do not change the crucial message of the paper. The two separate issues addressed in this corrigendum regard figure 9 and the DNS data made accessible in the Chair of Fluid Dynamics (FDY) Database. Below we will clarify both of them.

The plots in figure 9(a–d) were erroneously shifted vertically by '1'. This mistake, however, does not affect the finding of the new scaling law in the centre region of the channel flow with wall blowing and suction, as the vertical shift was consistently made on both the left ('numerical') and right ('theoretical') parts of (4.3) repeated here:

$$\frac{\bar{U}_1 - U_B}{u_\tau} = \frac{1}{\gamma} \ln \left(\frac{x_2}{h} \right), \tag{1}$$

where u_τ is the friction velocity and U_B is the bulk velocity. The mistake has been corrected in figure 1(a–d) below, which represents figure 9(a–d) from Avsarkisov *et al.* (2014), and the data are now correctly plotted without the vertical shift.

The second issue that we address in this corrigendum is related to the FDY database. In the database, a modified u_τ, scaled by the bulk velocity, U_B, was stored. The background to this is the usual normalization during the DNS, which we had not removed from the data. However, the plots in the original publication did not contain the erroneous factor. In the statistics files of the FDY database, we have removed the above-mentioned normalization, so that figure 1 now results from the data stored there.

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AVSARKISOV, V., OBERLACK, M. & HOYAS, S. 2014 New scaling laws for turbulent Poiseuille flow with wall transpiration. *J. Fluid Mech.* **746**, 99–122.
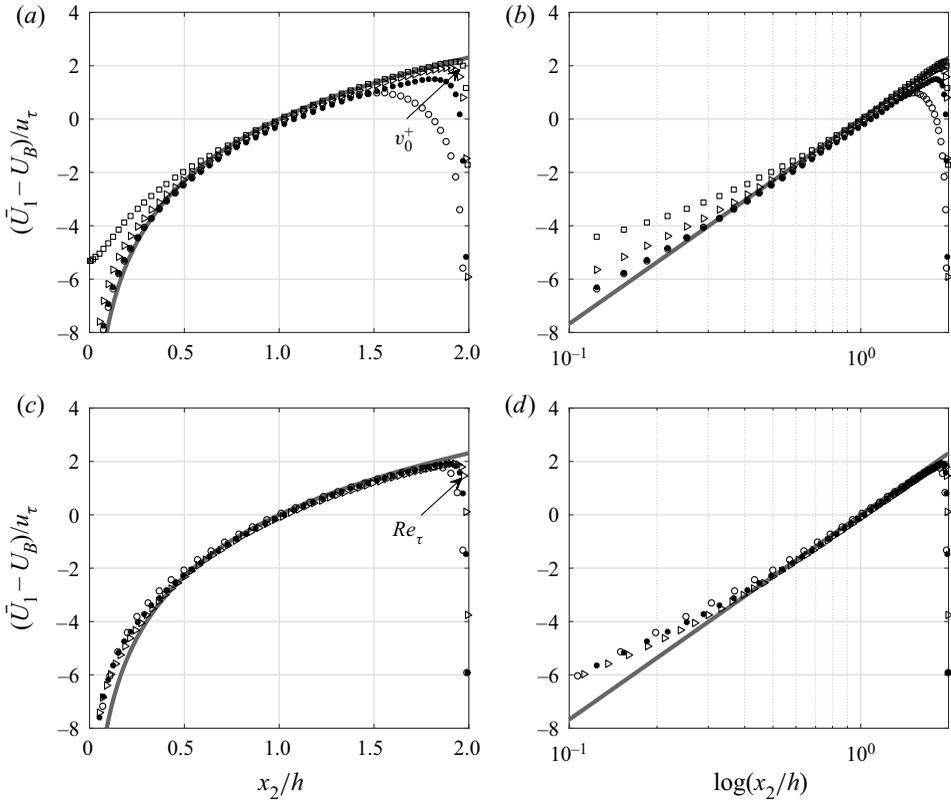
Figure 1. (*a,b*) Mean velocity profiles at constant Reynolds number $Re_\tau = 480$: $\circ$, $v_0^+ = 0.05$; $\bullet$, $v_0^+ = 0.1$; $\triangleright$, $v_0^+ = 0.16$; $\square$, $v_0^+ = 0.26$. (*c,d*) Mean velocity profiles at constant transpiration rate $v_0^+ = 0.16$: $\circ$, $Re_\tau = 250$; $\bullet$, $Re_\tau = 480$; $\triangleright$, $Re_\tau = 850$. Here $\bar{U}_1$ is the mean velocity in the streamwise direction; and $U_B = 0.89$ is the bulk velocity. Grey lines represent $1/\gamma \, \log(x_2/h)$, with $\gamma = 0.3$.