



## Corrigendum

## Corrigendum to “Laminar-to-Turbulence Transition Revealed Through a Reynolds Number Equivalence” [Engineering 5(3) (2019) 576–579]



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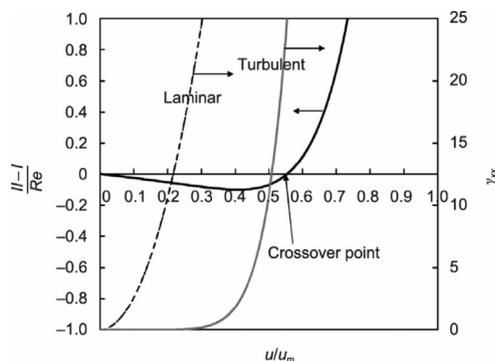
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Upon inspecting the [supplementary material](#) provided from the above paper, most recently, regrettably some issues were found which are better to be modified and corrected for a much improved experience of the researchers who may like to follow the analysis. Of course these do not affect what are written in the actual paper. The modifications/corrections in the [supplementary file](#) are described here.

## 1. In Appendix A: Pipe flow

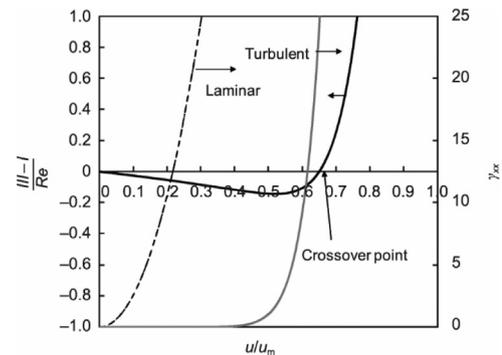
Following on from Eq. (S5) in [supplementary data](#), the left side vertical axis in [Fig. S1](#) in [supplementary data](#) should be marked as  $(II - I)/Re$ , which was  $(II - I)$  that was incorrect. Following on from Eqs. (S7) and (S8) in [supplementary data](#), Eq. (S9) in [supplementary data](#) should have a  $Re$  in the equation, it was missing in the originally submitted file. Eq. (S9) has thus been modified to include the  $Re$ :

$$\frac{III - I}{Re} = \frac{N(N+1)}{2} \left[ \frac{u}{N+1} u_m \right]^N - \frac{1}{2} \left[ \frac{1}{4} \left( 1 - \frac{u}{2u_m} \right)^{\frac{3}{2}} + \frac{1}{2} \left( 1 - \frac{u}{2u_m} \right)^{-\frac{1}{2}} - \frac{3}{4} \left( 1 - \frac{u}{2u_m} \right)^{\frac{1}{2}} \right] \quad (S9)$$



**Fig. S1.** Obtaining the  $Re_c$  by finding the crossover point corresponding to the laminar-to-turbulence transition in the boundary layer first and then from Eq. (S2) in [supplementary data](#) to find out the corresponding  $Re$ , which is  $Re_c$ .

[Fig. S2](#) in [supplementary data](#) has similar issue that the left side vertical axis should be labelled as  $(III - I)/Re$ , not  $(III - I)$ . Anyway [Figs. S1 and S2](#) have been modified to be consistent with the equations outlined.



**Fig. S2.** Obtaining the  $Re_c$  by finding the crossover point corresponding to the laminar-to-turbulence transition when using Eq. (S7) with  $N = 11$ .

## 2. In Appendix B: Plate flow

There can be a confusion created with the term  $R_0$  used in the original [supplementary material](#). As such the first paragraph has been modified which now reads as: Historical experimental measurements have validated, for a wide range of  $Re(s)$ , that the similarity solution to the velocity profiles of the plate flow is excellent. It is, however, very useful to correlate the result using a parabolic formula  $u/U_\infty = 1 - (r/R)^2$ , instead, where  $U_\infty$  is the velocity of the bulk fluid in plate flow and  $R$  may be taken as the boundary layer thickness of laminar region at  $x$  (m).  $r/R = 1 - \eta/R_0$ , where  $\eta$  is the dimensionless transformation variable.  $R_0$  is taken as 3.67, beyond which  $u$  is considered to be  $U_\infty$  (with a difference of less than 0.01 of the  $U_\infty$ ).

In addition, it was found that [Fig. S3](#) in [supplementary data](#) has different vertical axis opposite in location with that in [Figs. S1 and S2](#) making it inconvenient to compare among them. It has been modified also (see below). Here  $(V - IV)/5000$  is plotted in [Fig. S3](#) so to have similar axis as in [Figs. S1 and S2](#) for the ease to compare (also refer to Eqs. (S12) and (S13) in [supplementary data](#)).

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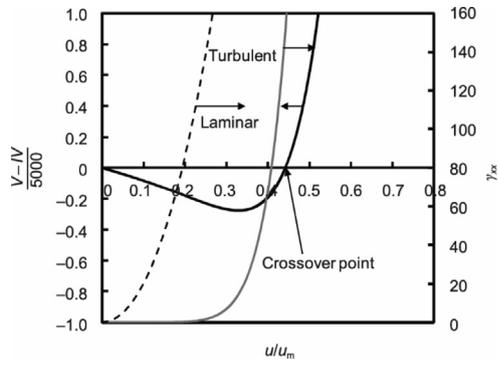


Fig. S3. Obtaining the  $Re_c$  by finding the crossover point for plate flow.

### 3. In Abstract

For plate flow, the local Reynolds number equivalence  $\gamma$  was about 151.5, which should have been about 154.6 as in the results section. So is in the [supplementary data](#).

### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.eng.2025.06.008>.