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Structural and stability characteristics of jets in crossflow – CORRIGENDUM

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After extensive examination and testing, we have determined that erroneous jet flow rates were used in some of the experiments in the above-noted papers (Getsinger *et al.* 2014; Gevorkyan *et al.* 2016). This error only pertains to those experiments involving acetone planar laser-induced fluorescence (PLIF) imaging, in which the jet fluid is a mixture of helium, nitrogen and acetone vapour. For these acetone PLIF experiments, the flow rates of helium and nitrogen were prescribed in a manner that erroneously neglected the contribution of acetone vapour to the combined mixture flow rate. Therefore, our actual jet flow rates were higher than those stated in the two papers for such experiments. The identification of instabilities cited (convective instability versus absolute instability in the upstream shear layer, for example) is unchanged in the papers, as are the overall findings on mixing metrics and trends as well as jet structure. The overarching conclusions for the papers are also unchanged. However, many of the parameter values cited in the figures require correction.

To correct the research record, we note the following for transverse jet experiments in the papers mentioned above involving **acetone PLIF experiments only**:

(i) For equidensity transverse jet experiments, where the jet-to-crossflow density ratio S is unity, the jet Reynolds numbers should be increased by 22 %. In most cases, this alters Re_j from the stated value of 1900 to a corrected value of 2300. Likewise, momentum flux ratios J should be increased by 48 %. For example, the range of conditions explored should be altered as follows:

Original J value	Corrected J value
2	3
5	7
8	12
10	15
12	18
20	30
30	44
41	61

Some or all of the above-noted parameter values appear in Getsinger *et al.* (2014) in figures 6–9, 11 and 12, as well as in Gevorkyan *et al.* (2016) for equidensity conditions in parts of figures 4–22.

(ii) For low-density transverse jets, at $S = 0.55$, the jet Reynolds number should be increased by 16 %, and J values by 34 %. These corrections for $S = 0.55$ apply to Getsinger *et al.* (2014) in figure 13 and to Gevorkyan *et al.* (2016) in figures 7, 11, 15 and 19. For the low-density case $S = 0.35$, there was no apparent error in the flow rate, and the values of the parameters are correct as stated in the papers. The same can be said for results from simultaneous PLIF/particle image velocimetry experiments in Getsinger *et al.* (2014).

(iii) Figures comparing jets with different density ratios did not actually have matched momentum flux ratios J, as desired; this applies to figure 13 in Getsinger *et al.* (2014) and to figures 7, 11, 15, 19 and 21 in Gevorkyan *et al.* (2016). Nevertheless, the overall conclusions in the papers regarding the influence of lowered densities on jet structure, instabilities and the contribution of crossflow entrainment to mixing are still correct and consistent with additional experimental datasets (Gevorkyan 2015).

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