

Supplementary Material: Self-similar Properties of Decelerating Turbulent Jets

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This document provides additional reference data obtained from the direct numerical simulations reported in the article titled ‘Self-similar Properties of Decelerating Turbulent Jets’.

Figure 1 shows the temporal evolution of the radial profiles of the ensemble averaged axial velocity (\bar{u}), ensemble-averaged radial velocity (\bar{v}), and the Reynolds shear stress ($\overline{u'v'}$) at axial locations $x/D = 10$ and $x/D = 18$. See also supplementary movies 1–7 for actual time series.

Figure 2 shows the axial development from $x/D = 8$ –20 of the radial profiles of the ensemble-averaged axial velocity (\bar{u}), ensemble-averaged radial velocity (\bar{v}), and the Reynolds shear stress ($\overline{u'v'}$) for data averaged over the period $t/\tau = 50$ –69.

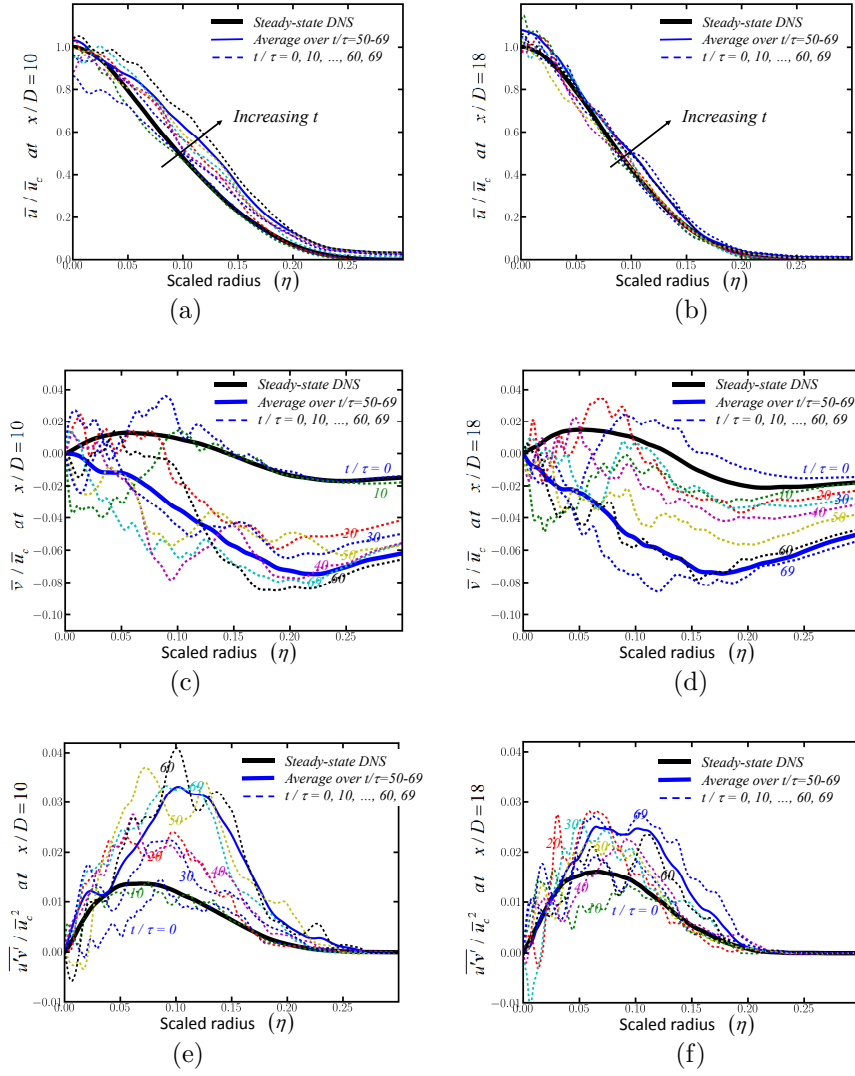


Figure 1: Transient radial profiles of (a) the axial velocity at $x/D = 10$, (b) the axial velocity at $x/D = 18$, (c) the radial velocity at $x/D = 10$ (d) the radial velocity at $x/D = 18$ (e) $\overline{u'v'}$ at $x/D = 10$. (f) $\overline{u'v'}$ at $x/D = 18$.

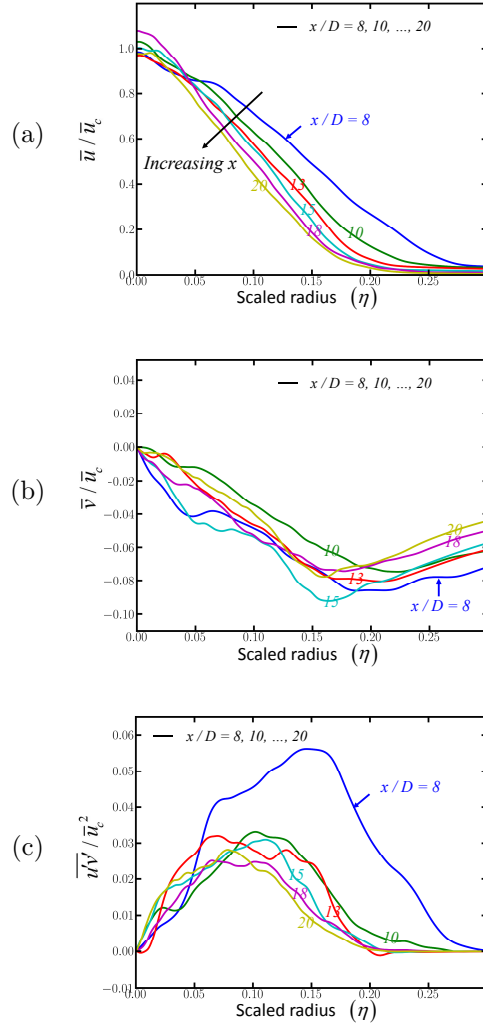


Figure 2: Temporally averaged radial profiles over $t/\tau = 50 - 69$ at multiple downstream locations of (a) the axial velocity, (b) the radial velocity, (c) Reynolds stress $(\overline{u'v'})$.