

DNS16 Reynolds–Stress Budgets

July 13, 2026

1 Stations

Position	x/δ_{avg}	H	$C_f \times 10^3$	Re_τ	Re_θ	β_{ZS}	β_i	β_{RC}
S1	2.84	1.50	3.580	444	1238	0.472	0.019	1.39
S2	4.66	1.60	2.788	452	1614	0.524	0.038	3.19
S3	7.78	2.00	1.218	395	2541	0.304	0.125	12.06
S4	8.54	2.16	0.899	369	2794	0.247	0.174	16.88
S5	9.86	2.50	0.468	302	3176	0.159	0.343	31.22
S6	11.11	2.87	0.201	224	3493	0.105	0.855	64.42
S7	11.54	3.00	0.148	200	3578	0.091	1.188	82.74
S8	13.06	3.43	-0.002	25	3849	0.062	612.560	5776.35

Table 1: Boundary-layer parameters at the eight stations.

2 Reynolds-stress budgets

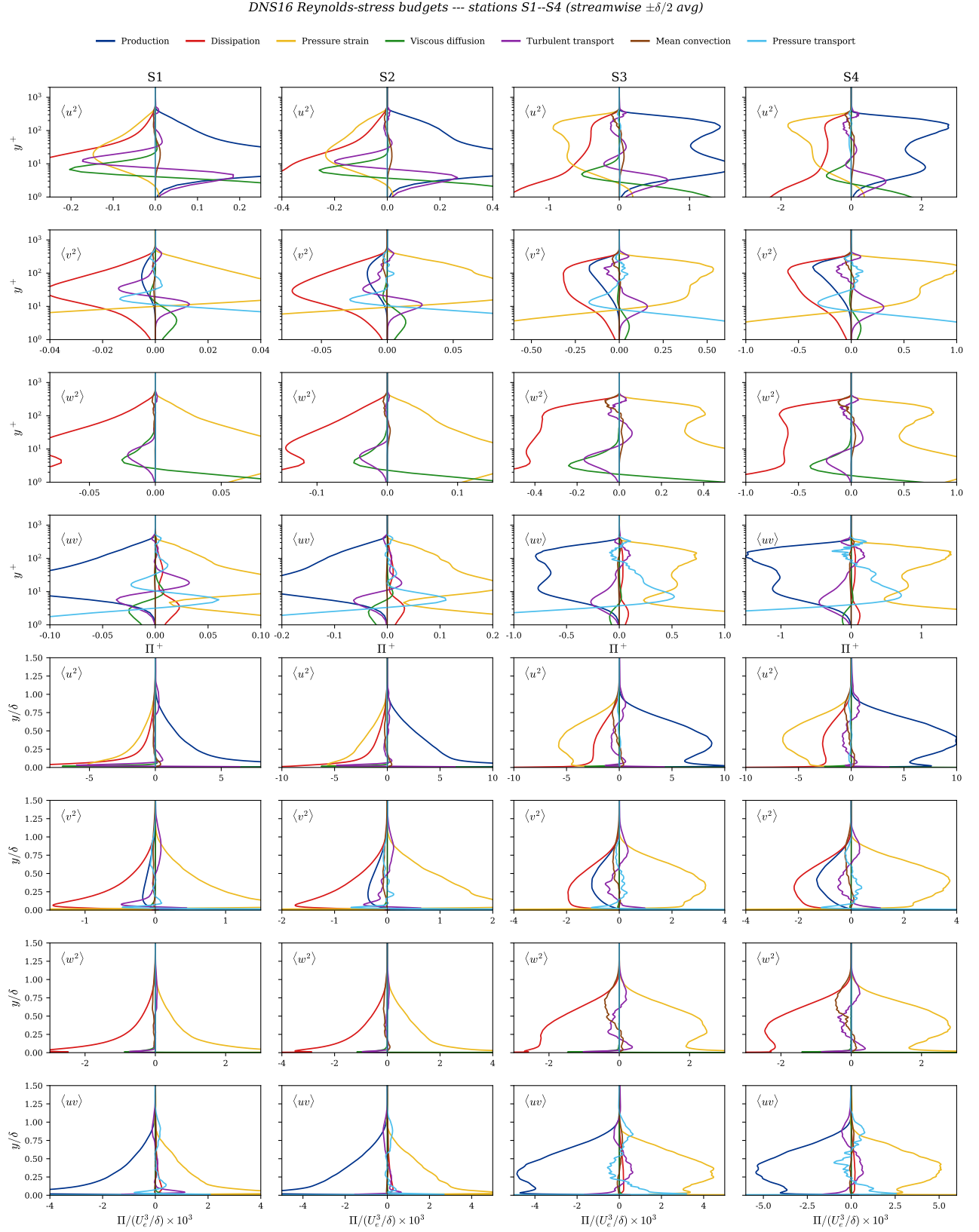


Figure 1: The Reynolds stress budgets (stations S1–S4). The levels and axes are normalized with the friction-viscous scales (a) and outer scales (b). The rows are for $\langle u^2 \rangle$, $\langle v^2 \rangle$, $\langle w^2 \rangle$, and $\langle uv \rangle$ for each figure. Production, dark blue solid line; dissipation, red solid line; pressure-strain, yellow solid line; viscous diffusion, green solid line; turbulent transport, purple solid line; mean convection, brown solid line; pressure transport, light blue solid line.

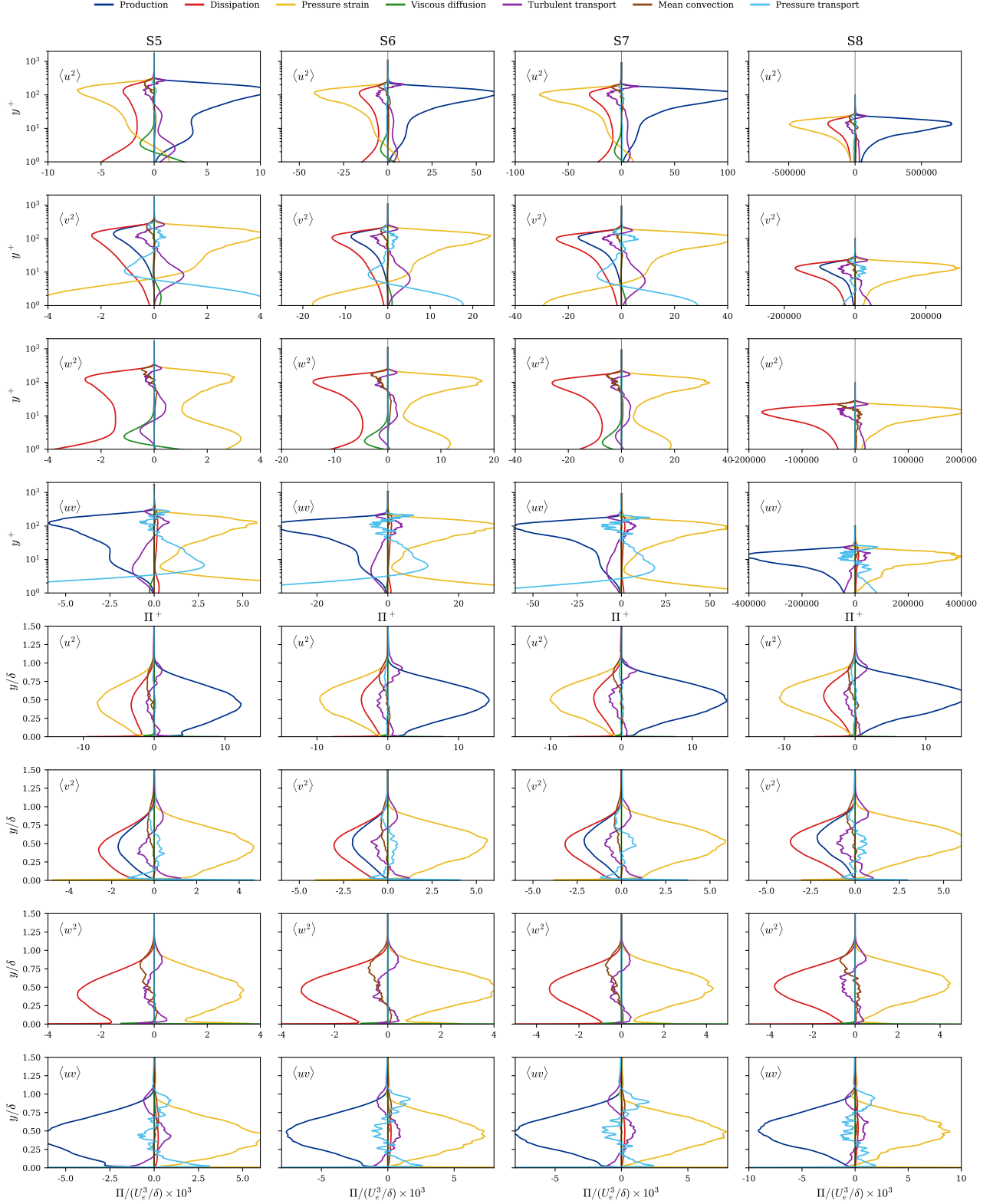


Figure 2: The Reynolds stress budgets (stations S5–S8). The levels and axes are normalized with the friction-viscous scales (a) and outer scales (b). The rows are for $\langle u^2 \rangle$, $\langle v^2 \rangle$, $\langle w^2 \rangle$, and $\langle uv \rangle$ for each figure. Production, dark blue solid line; dissipation, red solid line; pressure-strain, yellow solid line; viscous diffusion, green solid line; turbulent transport, purple solid line; mean convection, brown solid line; pressure transport, light blue solid line.