

DNS of turbulent channel flow - Summary of (some of the) existing databases

| Re_τ | Channel Size | Grid Points | Min/Max Wall-normal Spacing | Num. Meth. | Authors |
|-----------------------|--------------------------------------|--|------------------------------------|-------------------|------------------------|
| 110 | $5\pi h \times 2\pi h \times 2h$ | $96 \times 96 \times 65$ | 0.13 – 5.4 | PS | Kasagi et al. |
| 150 | $5\pi h \times 2\pi h \times 2h$ | $128 \times 128 \times 97$ | 0.08 – 4.91 | PS | Kasagi et al. |
| 150 | $4\pi h \times 2\pi h \times 2h$ | $128 \times 128 \times 129$ | 0.045 – 3.68 | PS | Soldati, Kuerten |
| 150 | $4\pi h \times 2\pi h \times 2h$ | $192 \times 192 \times 192$ | 0.18 – 2.84 | FV2 | Portela |
| 155 | $2.5\pi h \times 1.5\pi h \times 2h$ | $192 \times 160 \times 129$ | 0.42 – 3.83 | FD2 | Arcen, Taniere |
| 180 | $4\pi h \times 4/3\pi h \times 2h$ | $128 \times 128 \times 129$ | 0.05 - 4.4 | PS | Moser, Kim, Mansour |
| 180 | $4\pi h \times 2\pi h \times 2h$ | $192 \times 160 \times 129$ | 0.05 – 4.4 | PS | Kim et al. |
| 180 | $2\pi h \times 2\pi h \times 2h$ | $128 \times 128 \times 130$ | ?? | PS | Xu |
| 180 | $4\pi h \times 4/3\pi h \times 2h$ | $96 \times 96 \times 97$ | 0.096 – 5.96 | PS | Adrian et al.* |
| 180 | $6.4h \times 3.2h \times 2h$ | $1024 \times 512 \times 480$ | 0.05 – 0.972 | FD4/2 | Kozuka et al.** |
| 180 | $3h \times 1.5h \times 2h$ | $48 \times 48 \times 192$ | 0.9 – 2.86 | PS | Mortensen et al. |
| 184 | $2.5\pi h \times 1.5\pi h \times 2h$ | $192 \times 160 \times 129$ | ?? | FD2 | Arcen, Taniere |
| 300 | $2.5\pi h \times 2\pi h \times 2h$ | $128 \times 128 \times 193$ | 0.04 – 4.91 | PS | Kasagi et al. |
| 300 | $4\pi h \times 2\pi h \times 2h$ | $256 \times 256 \times 257$ | 0.0226 – 3.68 | PS | Soldati, Kuerten |
| 300 | $4\pi h \times 2\pi h \times 2h$ | $256 \times 256 \times 129$ | 0.09 – 7.36 | PS | Papavassiliou et al. |
| 395 | $2\pi h \times \pi h \times 2h$ | $256 \times 192 \times 193$ | ?? - 6.5 | PS | Moser, Kim, Mansour |
| 400 | $2.5\pi h \times \pi h \times 2h$ | $192 \times 192 \times 257$ | 0.03 – 4.91 | PS | Kasagi et al. |
| 550 | $8\pi h \times 4\pi h \times 2h$ | $1536 \times 1536 \times 257$ | ?? - 4.5 | PS | del Alamo et al. |
| 590 | $2\pi h \times \pi h \times 2h$ | $384 \times 384 \times 257$ | ?? - 7.2 | PS | Moser, Kim, Mansour |
| 600 | $2\pi h \times 2\pi h \times 2h$ | $384 \times 384 \times 361$ | ?? | PS | Xu |
| 650 | $2\pi h \times \pi h \times 2h$ | $288 \times 384 \times 257$ | 0.049 – 7.98 | PS | Kasagi et al. |
| 934 | $8\pi h \times 3\pi h \times 2h$ | $3072 \times 2304 \times 385$ | ?? - 3.8 | PS | del Alamo et al. |
| 1000 | $6\pi h \times 1.5\pi h \times 2h$ | $768 \times 768 \times 521$ | ?? | PS | Xu |
| 1020 | $4\pi h \times 2\pi h \times 2h$ | $2048 \times 1536 \times 448$ | 0.15 – 7.32 | PS | Iwamoto, Kasagi et al. |
| 1160 | $6\pi h \times 2\pi h \times 2h$ | $1728 \times 1536 \times 769$ | ?? | PS | Iwamoto, Kasagi et al. |
| 2003 | $8\pi h \times 3\pi h \times 2h$ | $6144 \times 4608 \times 633$ | ??- 8.9 | PS? | Hojas, Jimenez |
| 2320 | $6\pi h \times 2\pi h \times 2h$ | $2304 \times 2048 \times 1025$ $3456 \times 3072 \times 1537$ | ?? | PS | Iwamoto, Kasagi et al. |

* Benchmarked against $128 \times 128 \times 129$ grid: no difference!

**With heat transfer