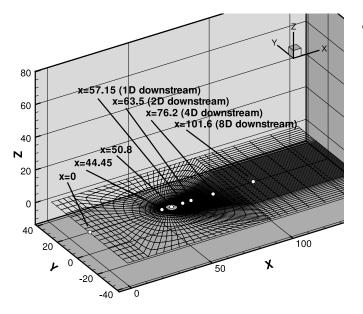
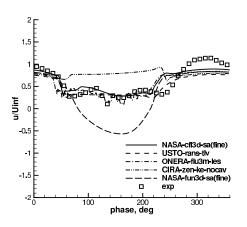
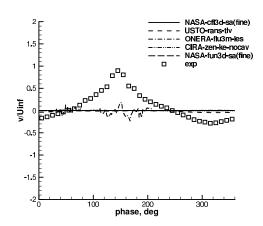
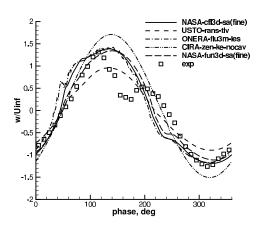
Results from CFDVAL2004 Case 2



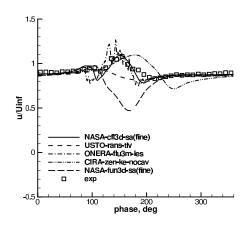
Time histories at x=50.63mm, y=0, z=0.4mm, all codes:



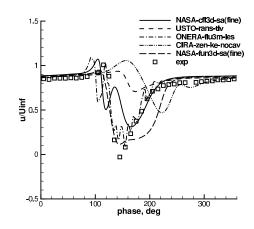


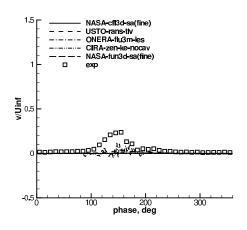


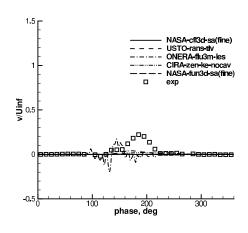
Time histories at x=57.15mm, y=0, z=10mm, all codes:

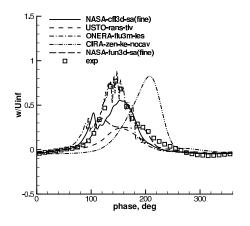


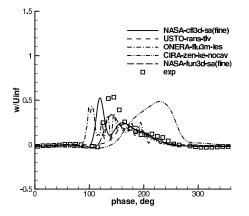
Time histories at x=63.5mm, y=0, z=10mm, all codes:



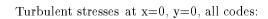


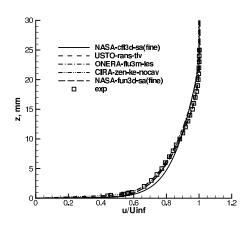


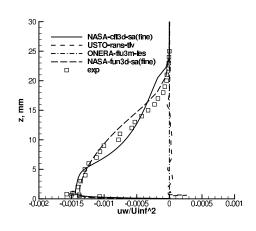


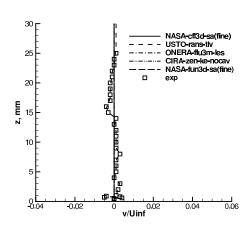


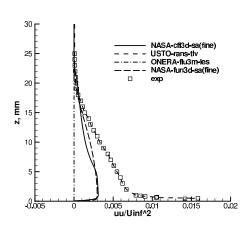
Average velocity at x=0, y=0, all codes:

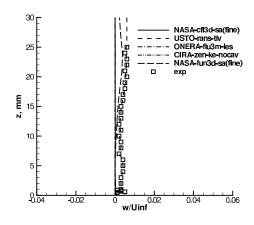


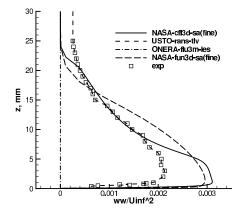






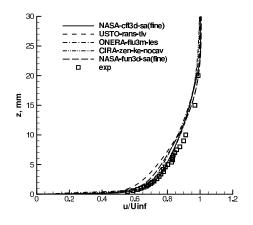


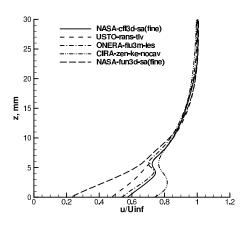


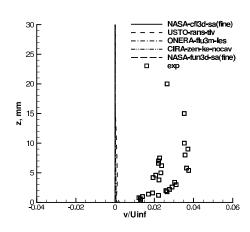


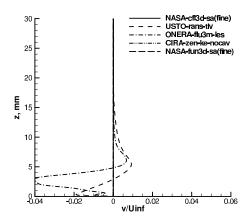
Average velocity at x=44.45mm, y=0, all codes:

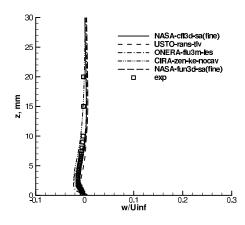
Average velocity at x=50.8mm, y=0, all codes:

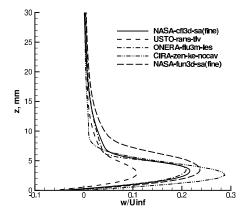






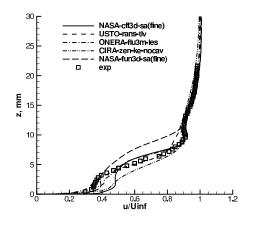


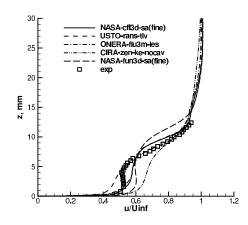


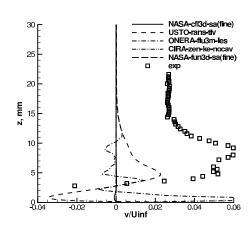


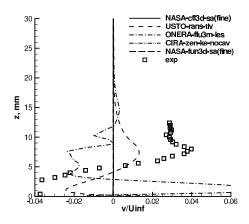
Average velocity at x=57.15mm, y=0, all codes:

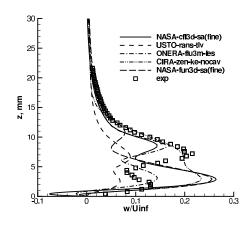
Average velocity at x=63.5mm, y=0, all codes:

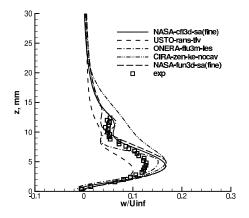






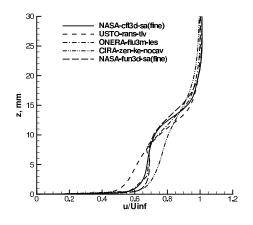


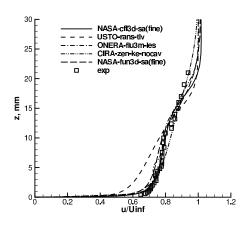


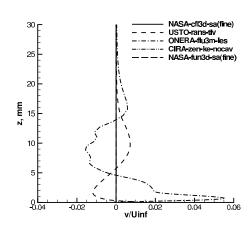


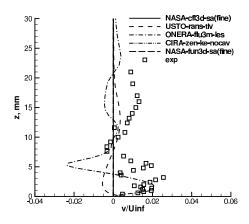
Average velocity at x=76.2mm, y=0, all codes:

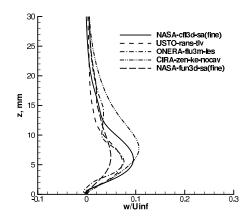
Average velocity at x=101.6mm, y=0, all codes:

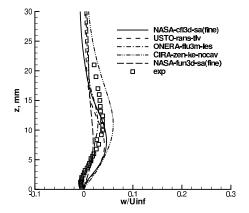




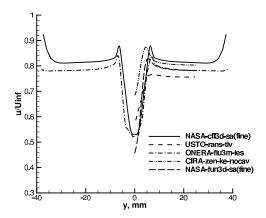


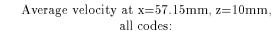


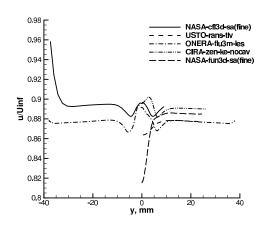


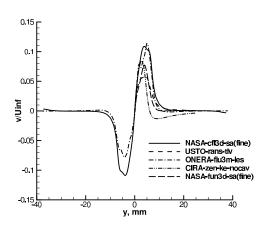


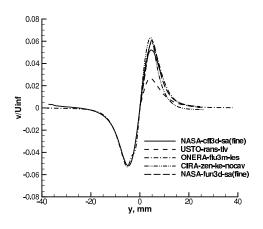
Average velocity at x=57.15mm, z=5mm, all codes:

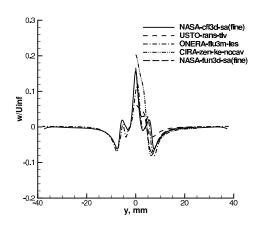


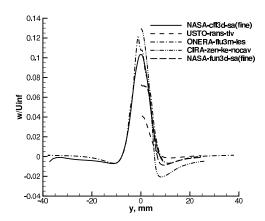




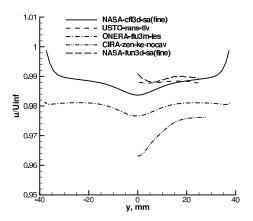


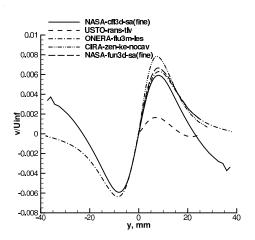


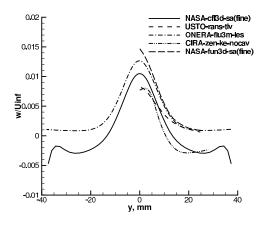




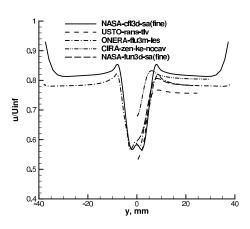
Average velocity at x=57.15mm, z=20mm, all codes:

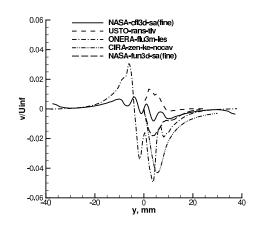


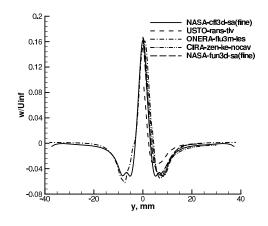




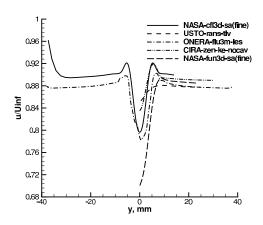
Average velocity at x=63.5mm, z=5mm, all codes:

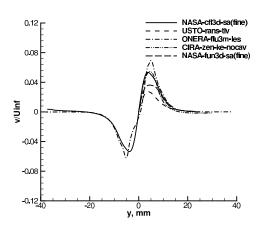


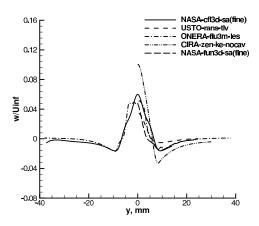




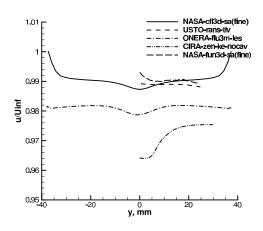
Average velocity at x=63.5mm, z=10mm, all codes:

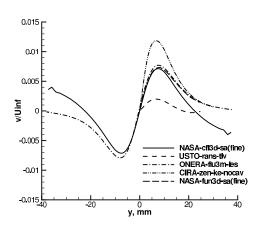


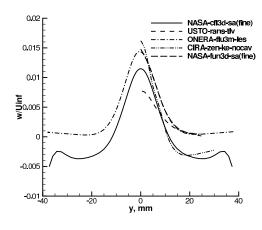




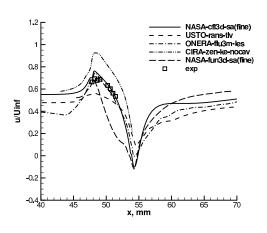
Average velocity at x=63.5mm, z=20mm, all codes:

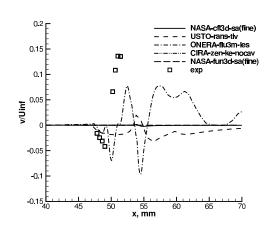


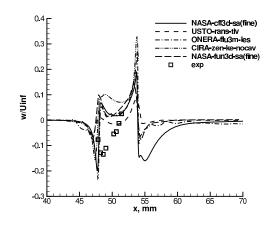




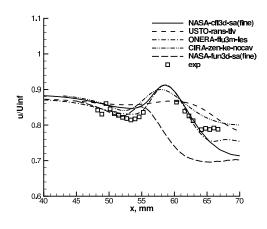
Average velocity at z=0.4mm, y=0, all codes:

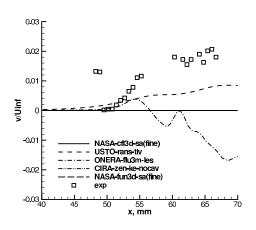


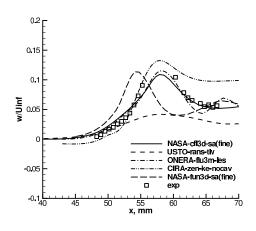




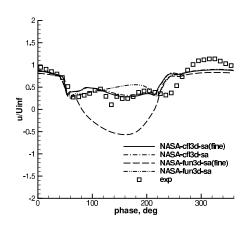
Average velocity at z=10mm, y=0, all codes:

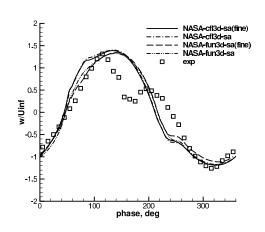




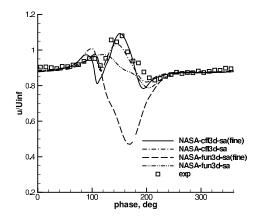


Grid effect on time histories at x=50.63mm, y=0, z=0.4mm:



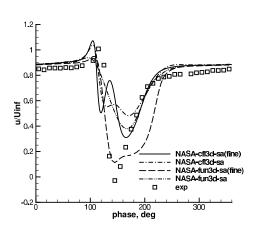


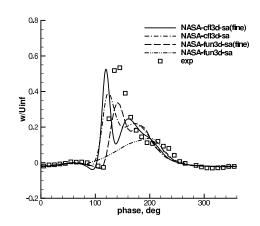
Grid effect on time histories at x=57.15mm, y=0, z=10mm:



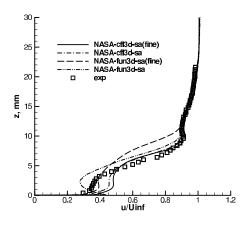
NASA-cfi3d-sa(fine)
NASA-fin3d-sa(fine)
NASA-f

Grid effect on time histories at x=63.5mm, y=0, z=10mm:





Grid effect on average velocity at x=57.15mm, y=0:

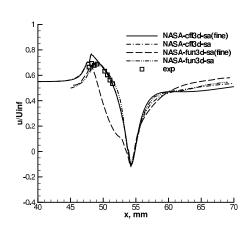


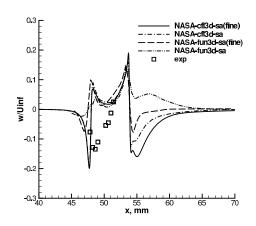
NASA-cf3d-sa(fine)
NASA-cf3d-sa(fine)
NASA-cf3d-sa(fine)
NASA-cf3d-sa(fine)
NASA-fun3d-sa(fine)
NASA-fun3d-sa
exp

10

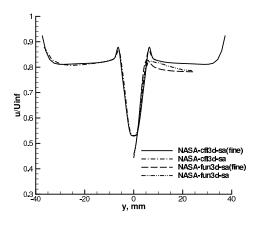
0.15 0.1 -0.05 0 0.05 0.1 0.15 0.2 0.25 0.3

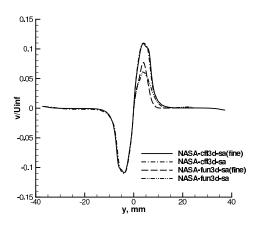
Grid effect on average velocity at z=0.4mm, y=0:

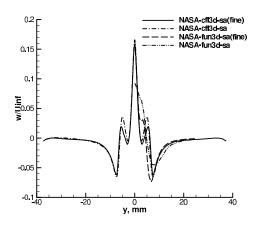




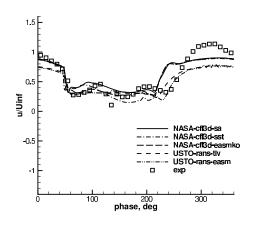
Grid effect on average velocity at x=57.15mm, z=5mm:

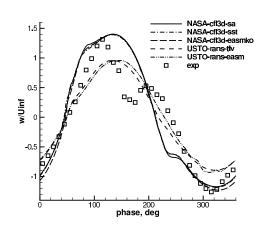




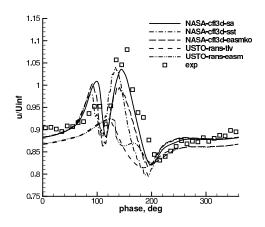


Turbulence model effect on time histories at x=50.63mm, y=0, z=0.4mm:

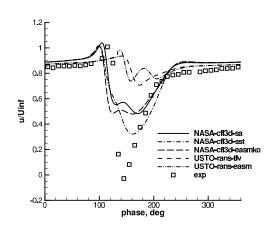


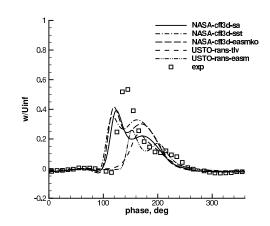


Turbulence model effect on time histories at x=57.15mm, y=0, z=10mm:

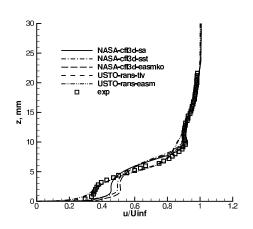


Turbulence model effect on time histories at x=63.5mm, y=0, z=10mm:

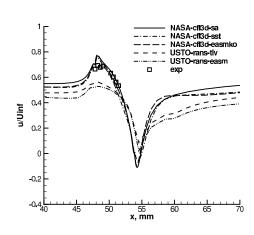


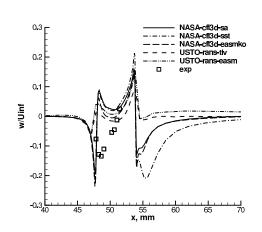


Turbulence model effect on average velocity at x=57.15mm, y=0:

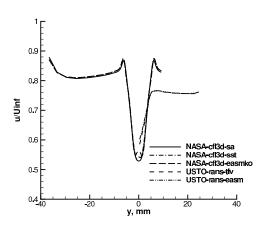


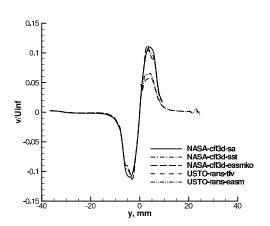
Turbulence model effect on average velocity at z=0.4mm, y=0:

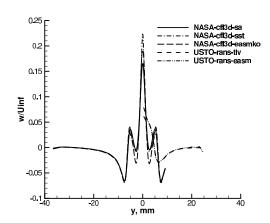




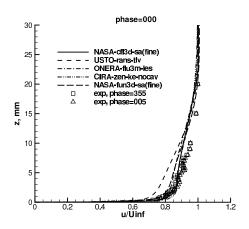
Turbulence model effect on average velocity at x=57.15mm, z=5mm:

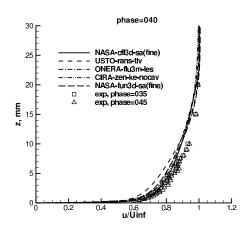


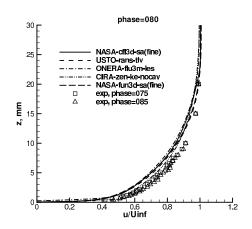


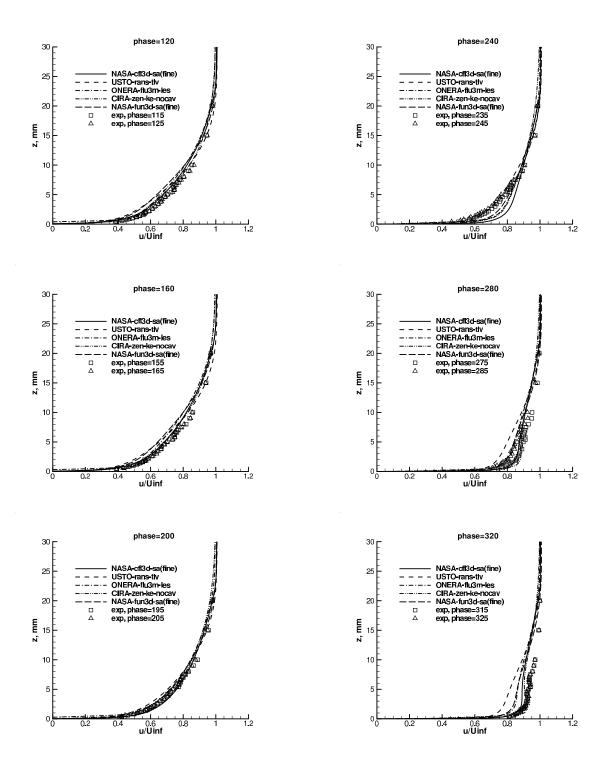


Phase-averaged u-velocity at x=44.45mm, y=0, all codes:

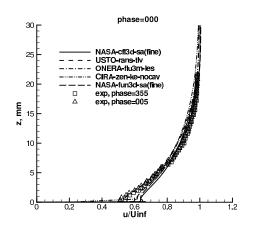


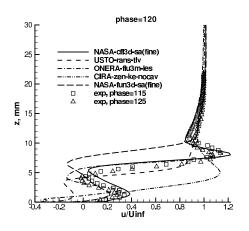


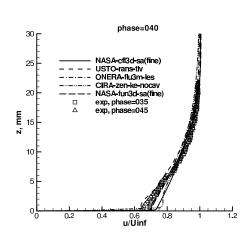


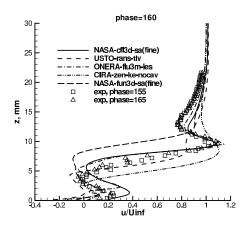


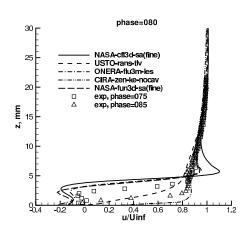
Phase-averaged u-velocity at x=57.15mm, y=0, all codes:

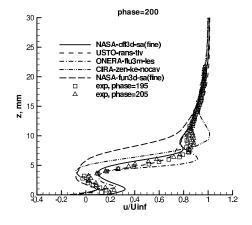




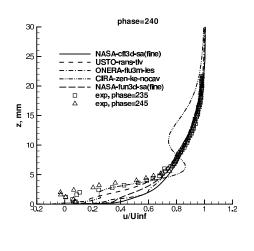


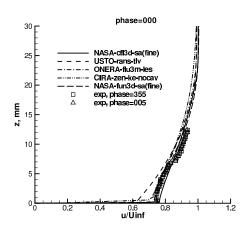


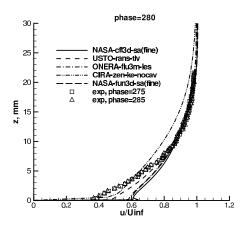


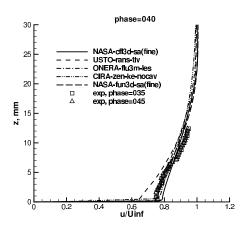


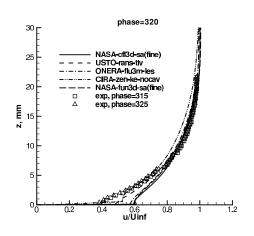
Phase-averaged u-velocity at x=63.5mm, y=0, all codes:

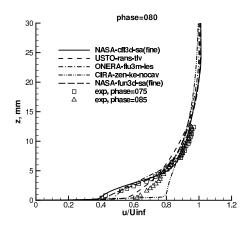


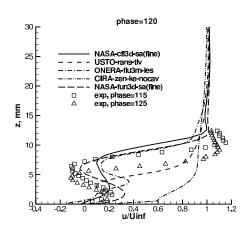


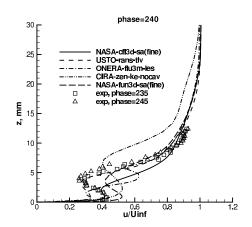


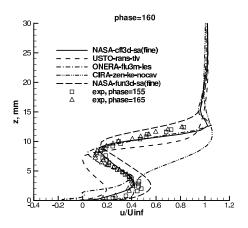


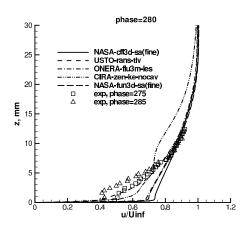


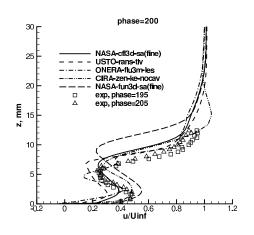


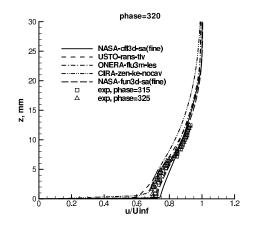




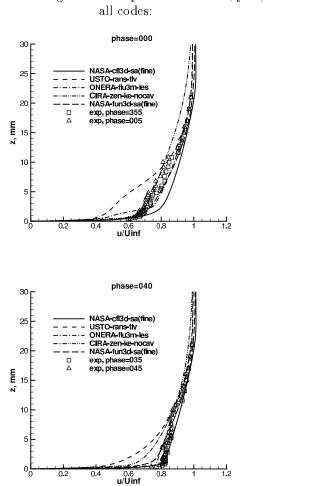


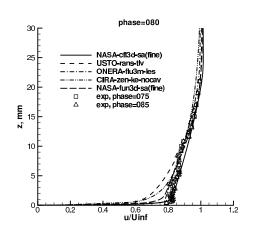


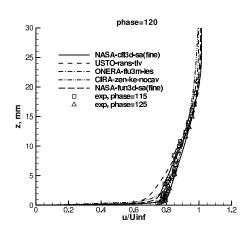


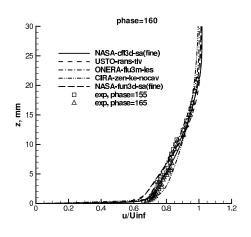


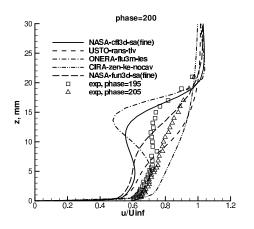
Phase-averaged u-velocity at x=101.6mm, y=0,

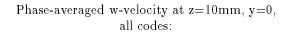


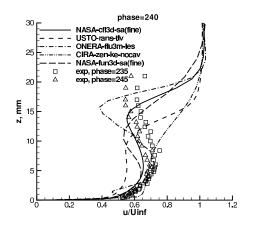


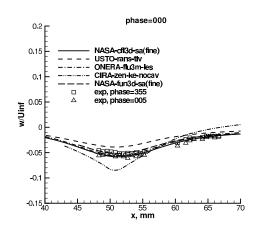


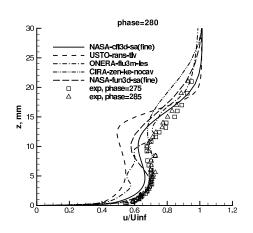


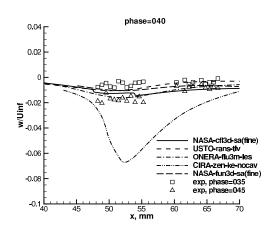


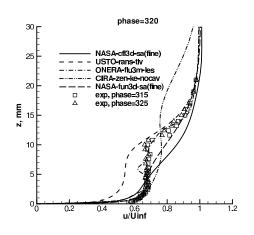


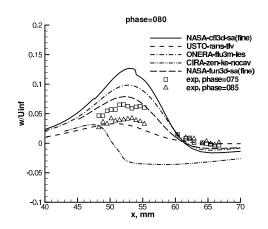


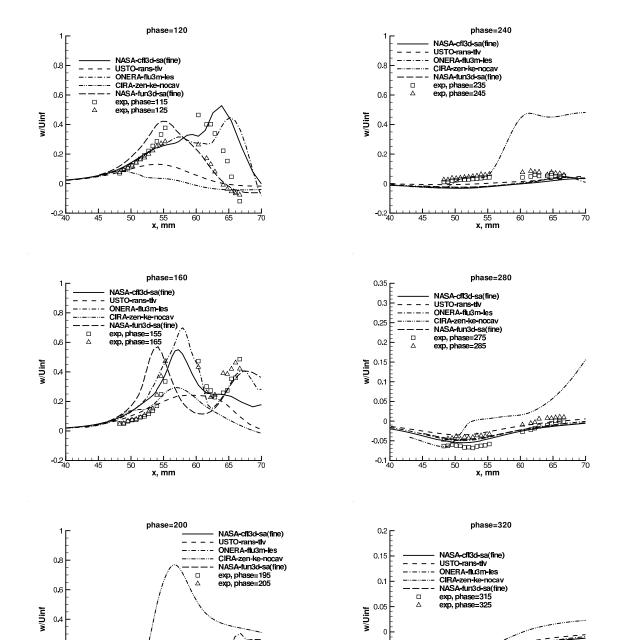












-0.05

-0.1

-0.15<u>L</u>

55 **x, mm** 65

0.2

-0.2 L 40

55 **x, mm** 65

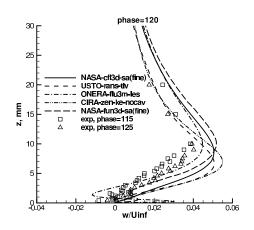
60

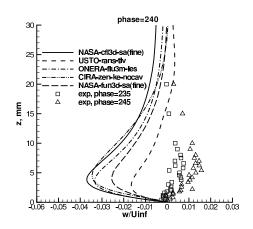
Phase-averaged w-velocity at x=44.45mm, y=0, all codes:



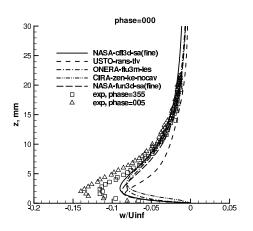
NASA-cfl3d-sa(fine)
USTO-rans-tiv
ONERA-flu3m-les
CIRA-zen-ke-nocav
NASA-fun3d-sa(fine)
exp, phase=355
exp, phase=005 20 z, mm 15 10

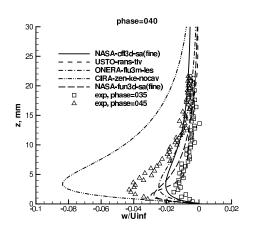
w/Uinf

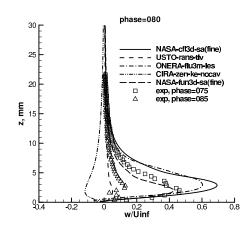


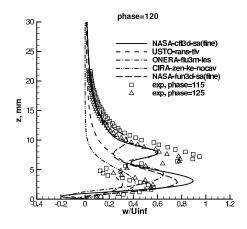


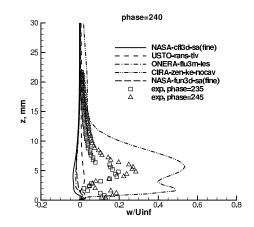
Phase-averaged w-velocity at x=57.15mm, y=0, all codes:

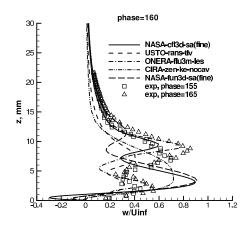


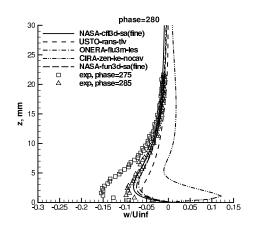


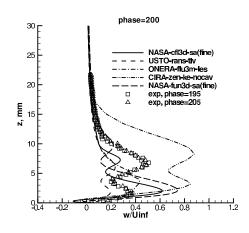


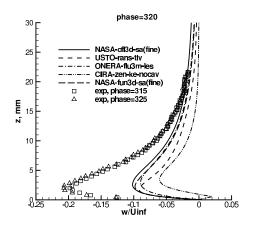




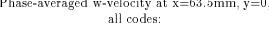


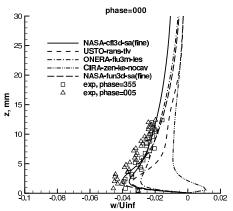


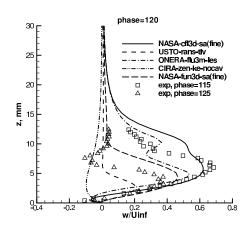


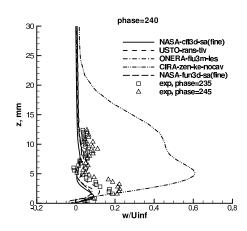


Phase-averaged w-velocity at x=63.5mm, y=0,

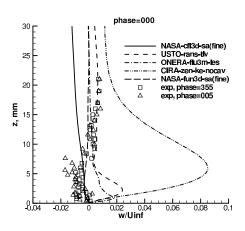


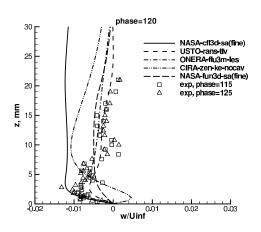


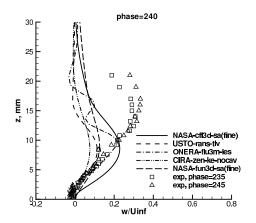




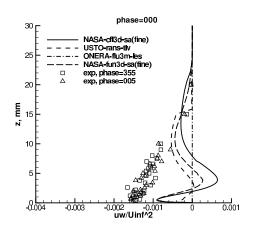
Phase-averaged w-velocity at x=101.6mm, y=0, all codes:

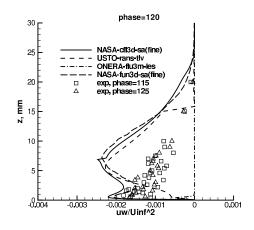


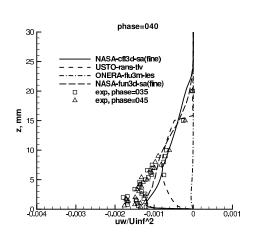


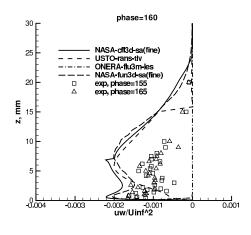


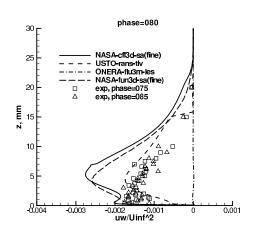
Phase-averaged u'w' turbulent stress at x=44.45mm, y=0, all codes:

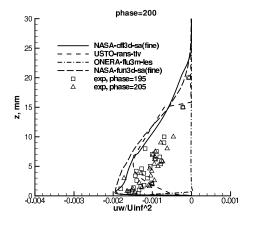


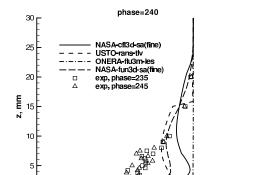








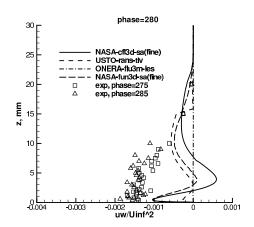


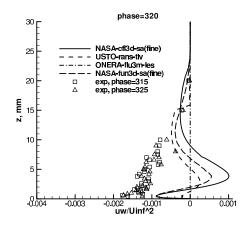


-0.002 -0.001 uw/Uinf^2

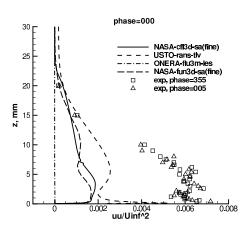
-0.003

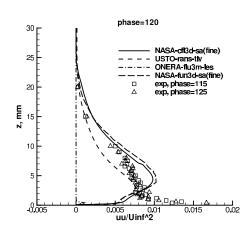
0.001

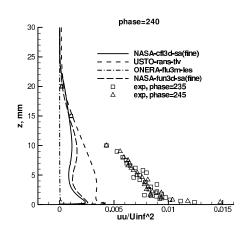




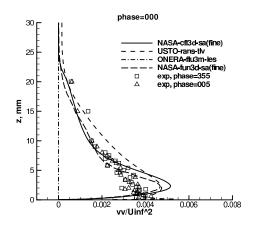
Phase-averaged u'u' turbulent stress at x=44.45 mm, y=0, all codes:

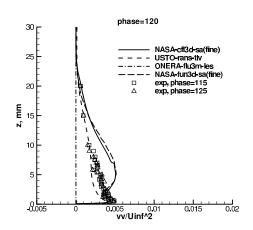


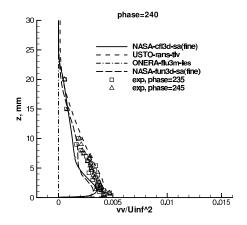




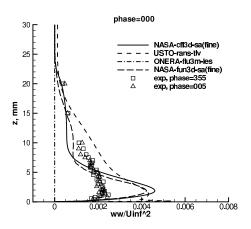
Phase-averaged v'v' turbulent stress at x=44.45mm, y=0, all codes:

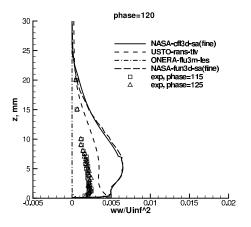


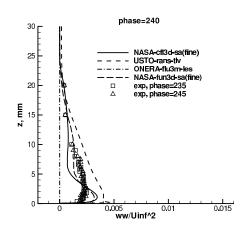




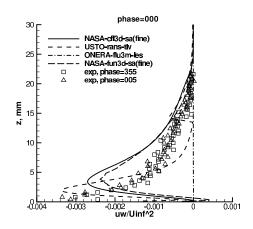
Phase-averaged w'w' turbulent stress at x=44.45mm, y=0, all codes:

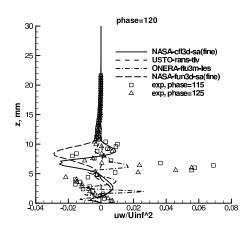


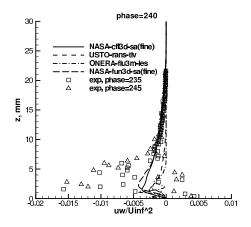




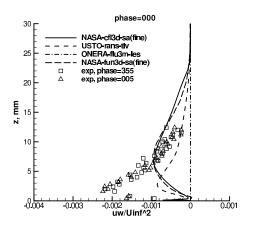
Phase-averaged u'w' turbulent stress at x=57.15mm, y=0, all codes:

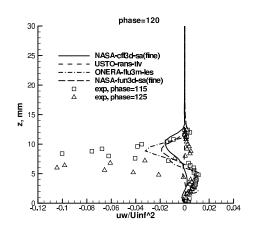


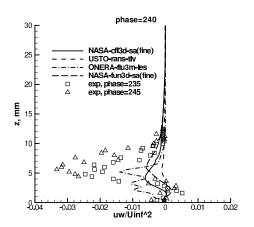




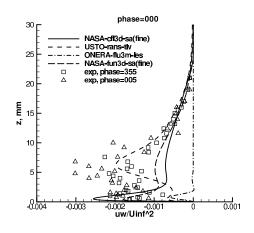
Phase-averaged u'w' turbulent stress at x=63.5mm, y=0, all codes:

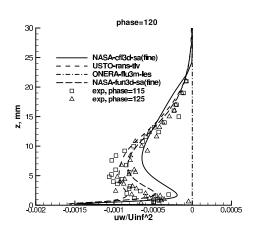


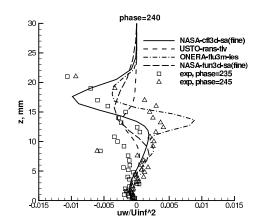




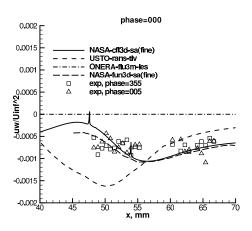
Phase-averaged u'w' turbulent stress at x=101.6mm, y=0, all codes:

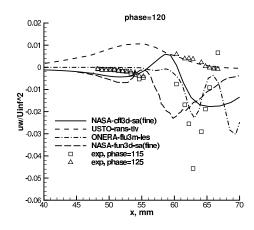


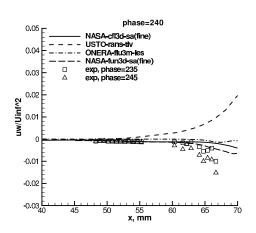




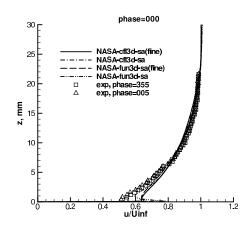
Phase-averaged u'w' turbulent stress at z=10mm, y=0, all codes:

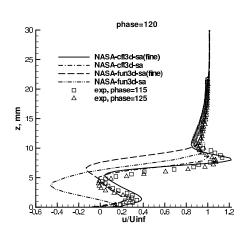


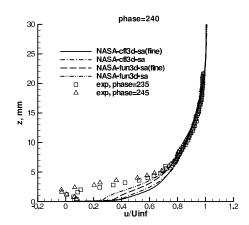




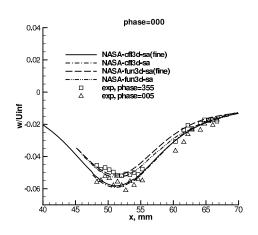
Grid effect on phase-averaged u-velocity at x=57.15mm, y=0:

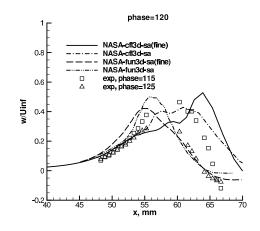


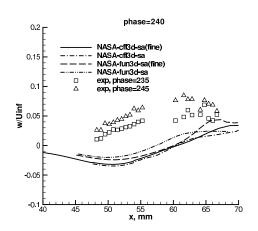




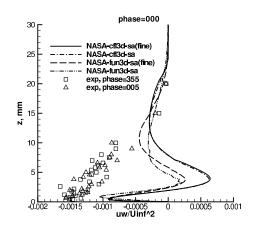
Grid effect on phase-averaged w-velocity at z=10mm, y=0:

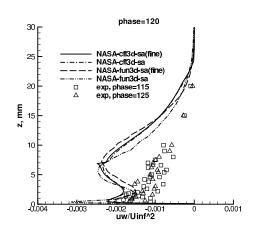


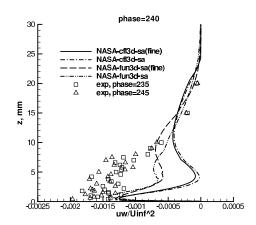




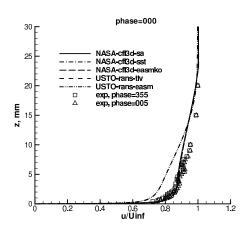
Grid effect on phase-averaged u'w' turbulent stress at x=44.45mm, y=0:

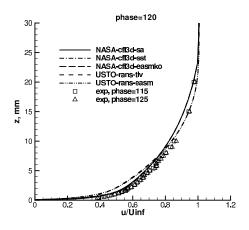


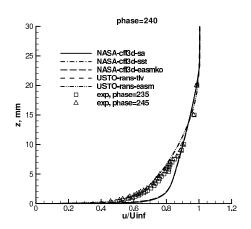




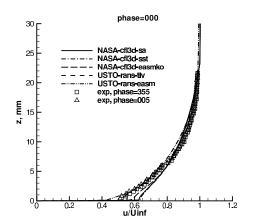
Turbulence model effect on phase-averaged u-velocity at x=44.45mm, y=0:

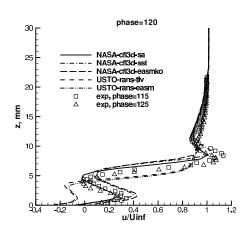


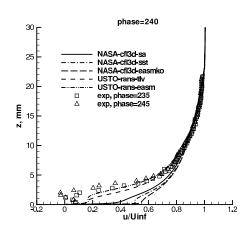




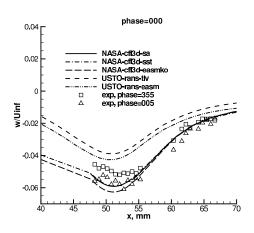
Turbulence model effect on phase-averaged u-velocity at x=57.15mm, y=0:

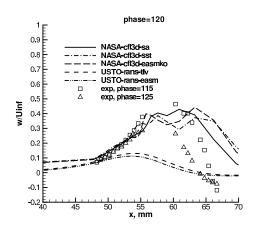


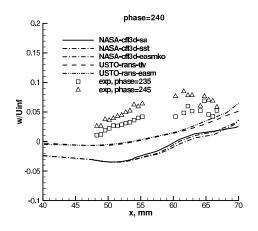




Turbulence model effect on phase-averaged w-velocity at z=10mm, y=0:







Turbulence model effect on phase-averaged u'w' turbulent stress at x=44.45mm, y=0:

