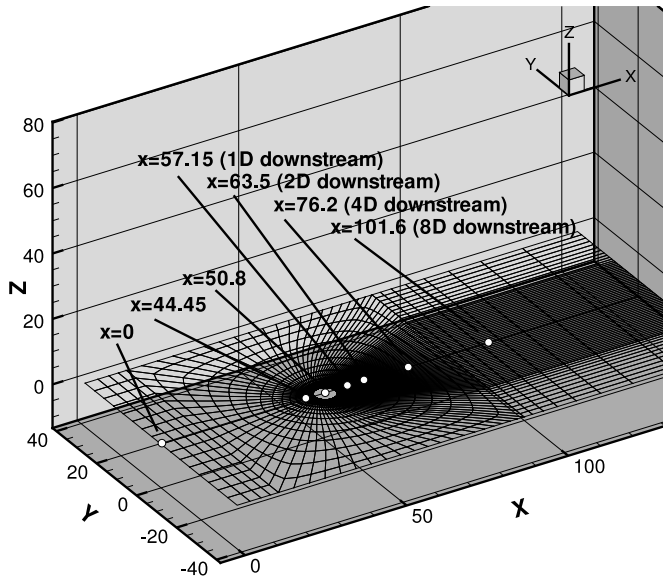
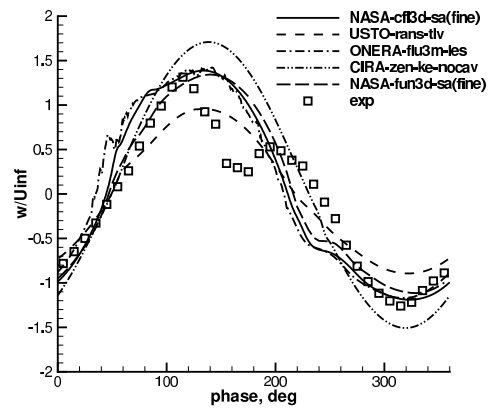
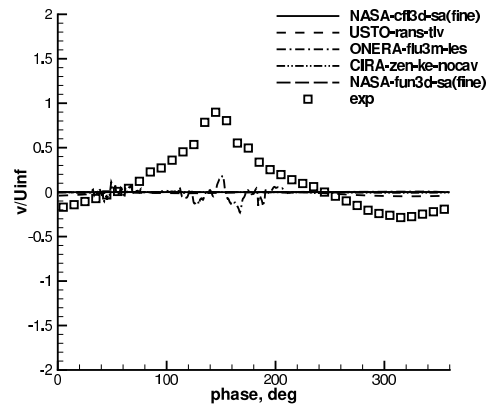
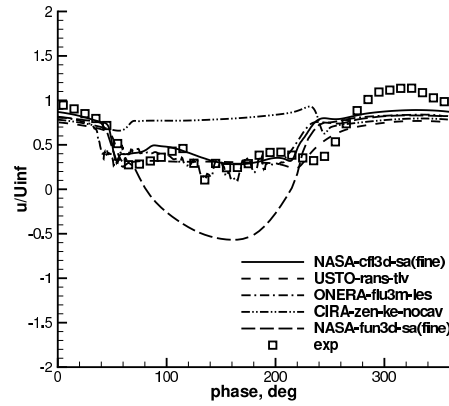


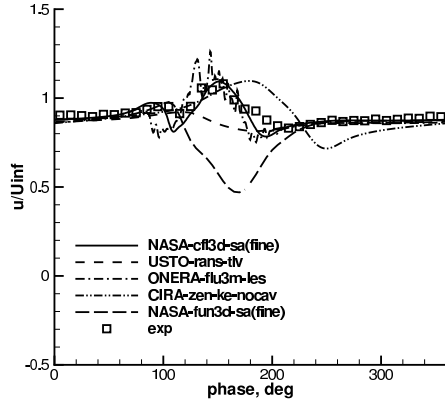
Results from CFDVAL2004 Case 2



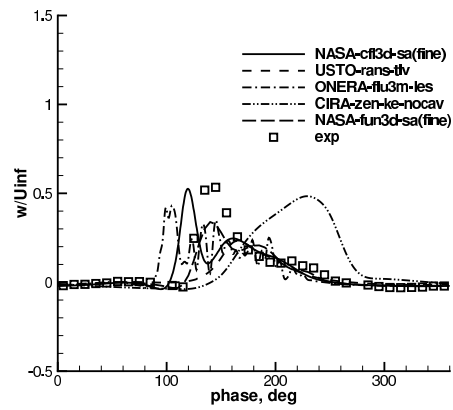
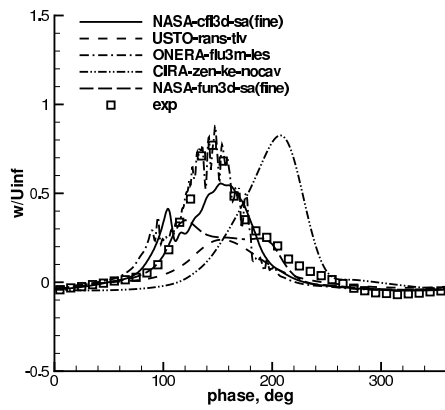
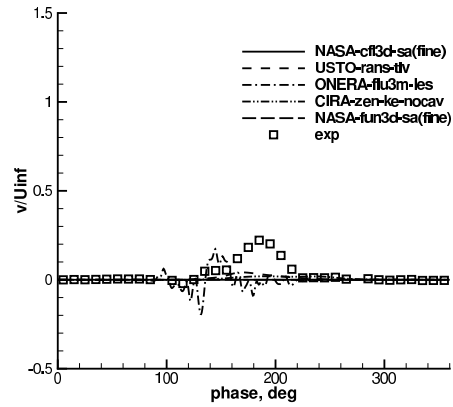
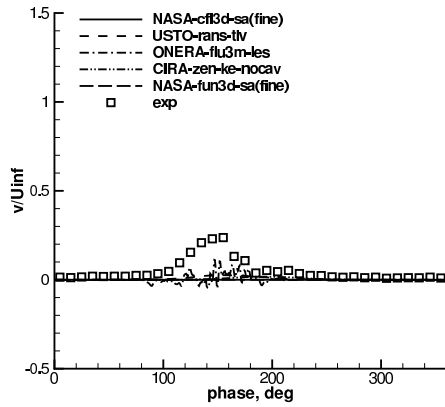
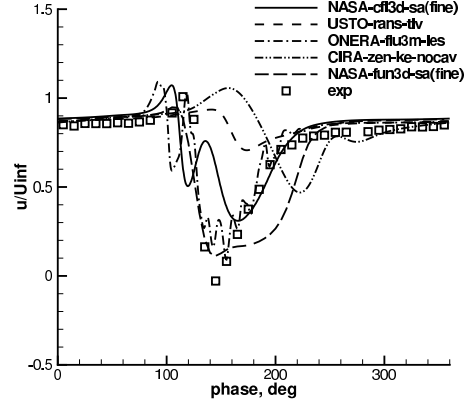
Time histories at $x=50.63\text{mm}$, $y=0$, $z=0.4\text{mm}$,
all codes:



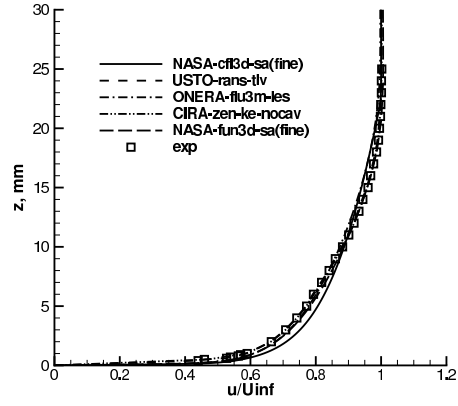
Time histories at $x=57.15\text{mm}$, $y=0$, $z=10\text{mm}$,
all codes:



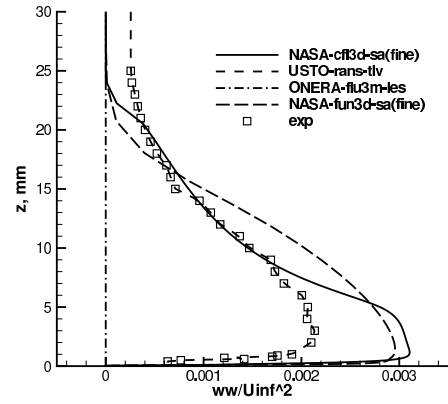
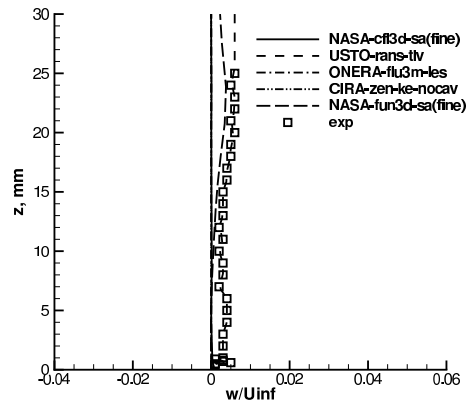
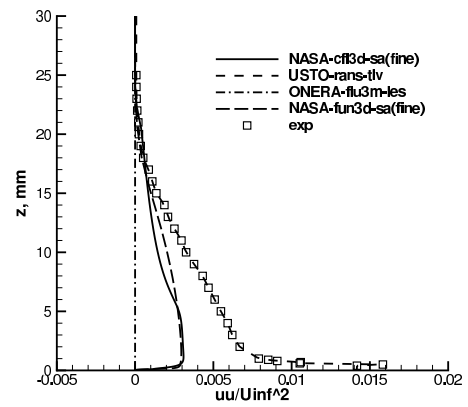
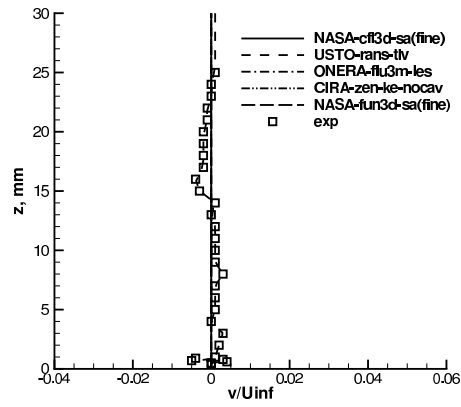
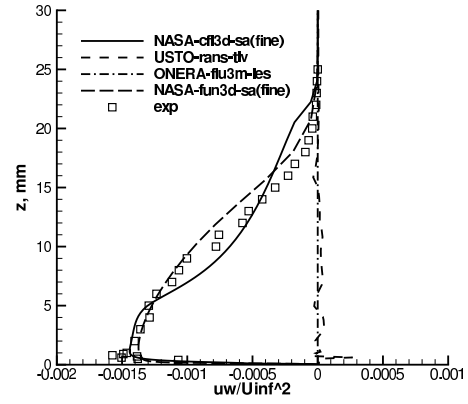
Time histories at $x=63.5\text{mm}$, $y=0$, $z=10\text{mm}$,
all codes:



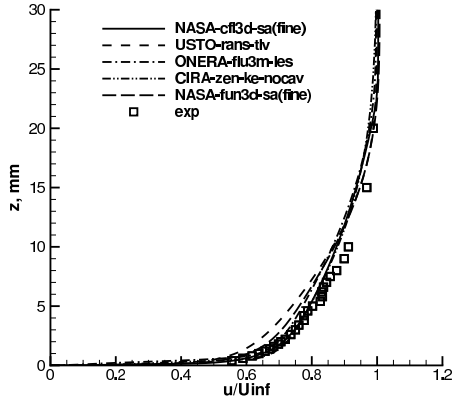
Average velocity at $x=0, y=0$, all codes:



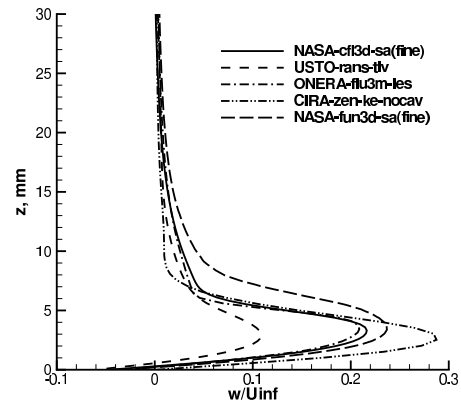
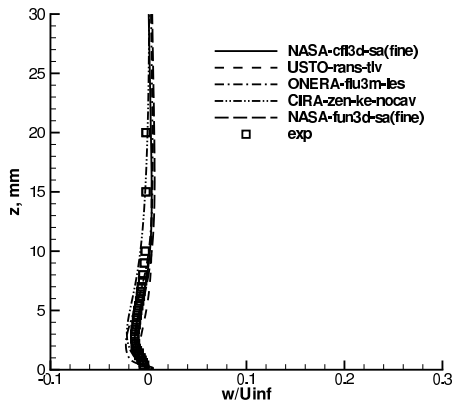
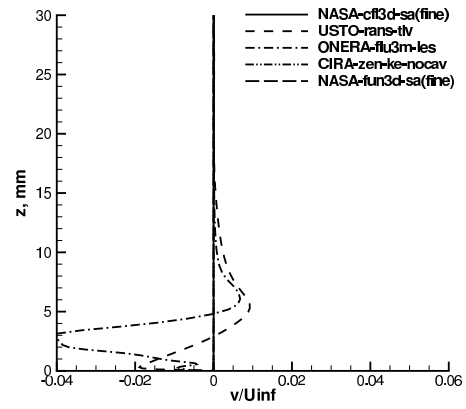
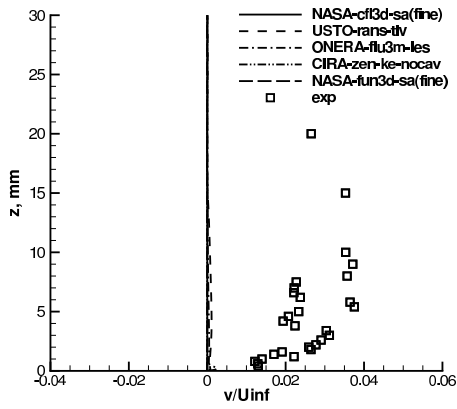
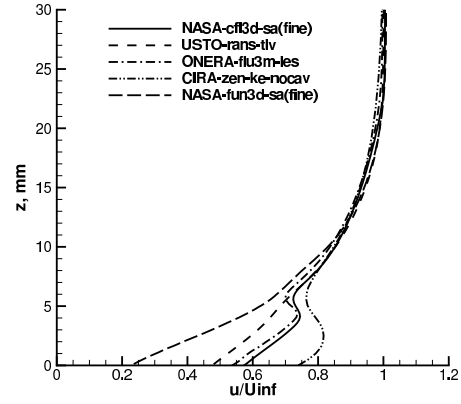
Turbulent stresses at $x=0, y=0$, all codes:



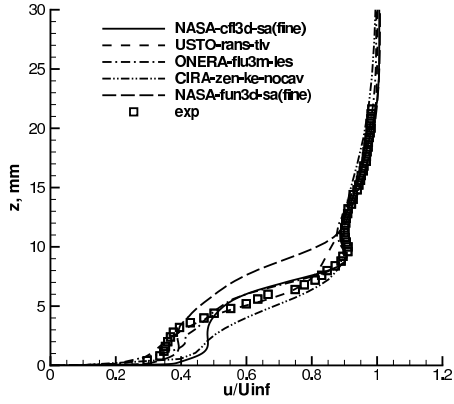
Average velocity at $x=44.45\text{mm}$, $y=0$, all codes:



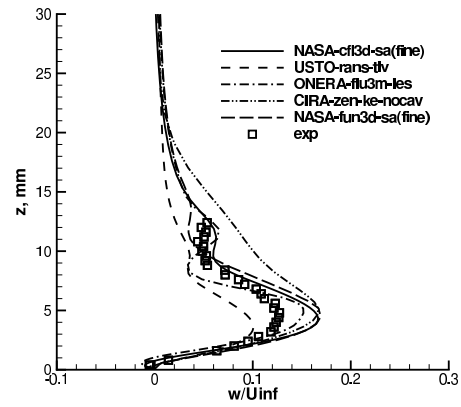
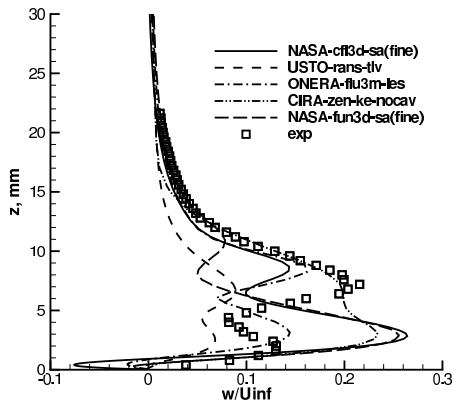
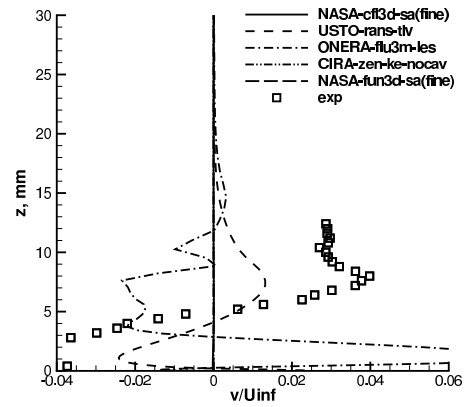
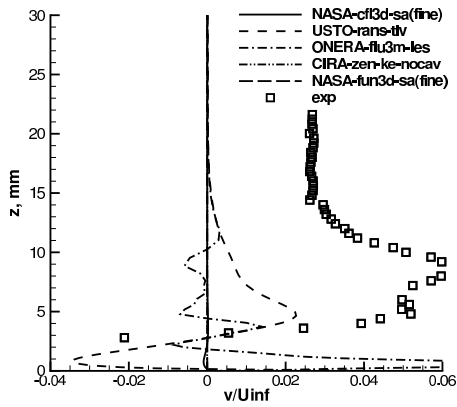
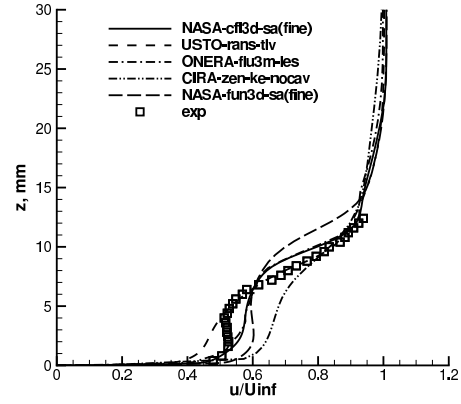
Average velocity at $x=50.8\text{mm}$, $y=0$, all codes:



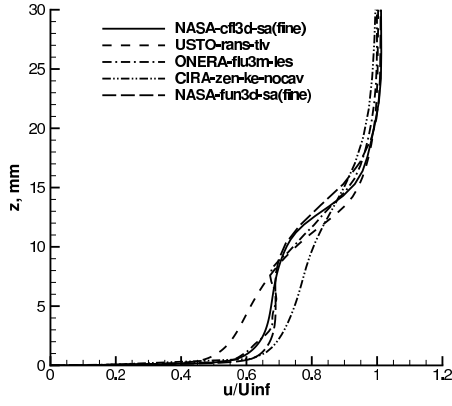
Average velocity at $x=57.15\text{mm}$, $y=0$, all codes:



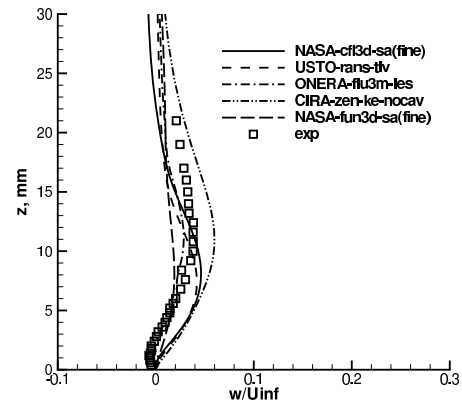
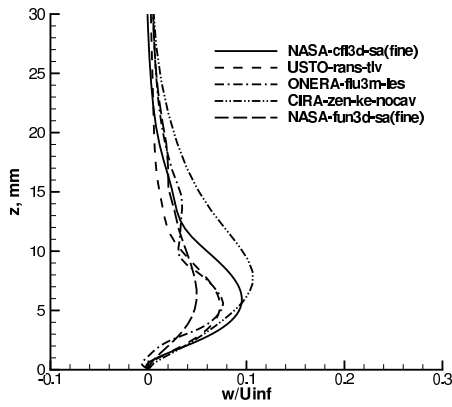
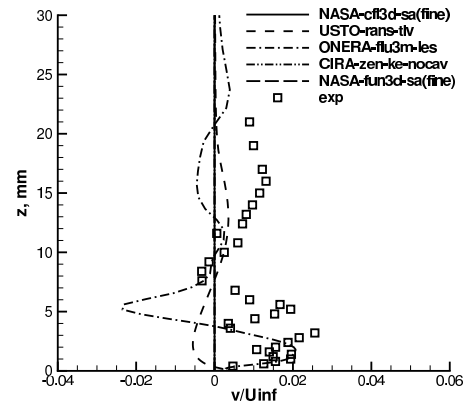
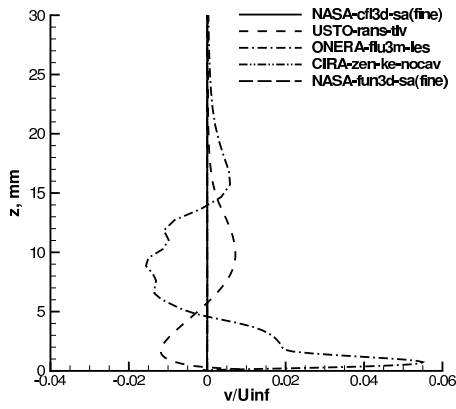
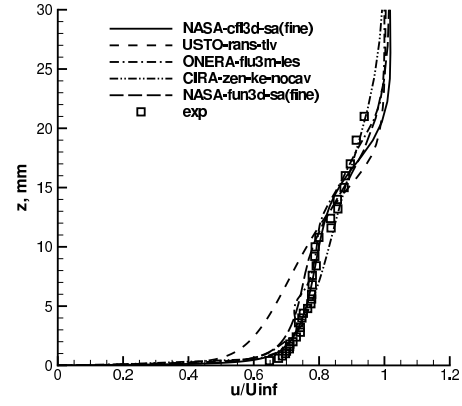
Average velocity at $x=63.5\text{mm}$, $y=0$, all codes:



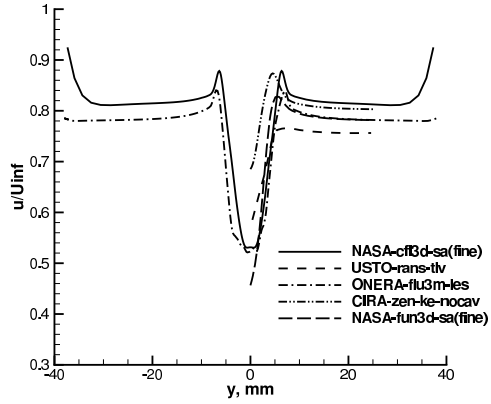
Average velocity at $x=76.2\text{mm}$, $y=0$, all codes:



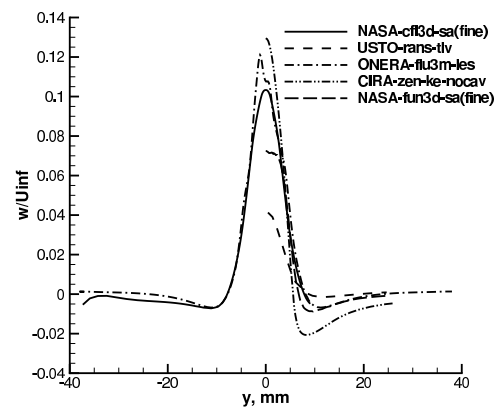
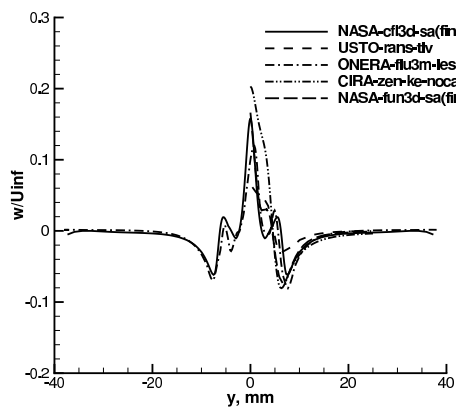
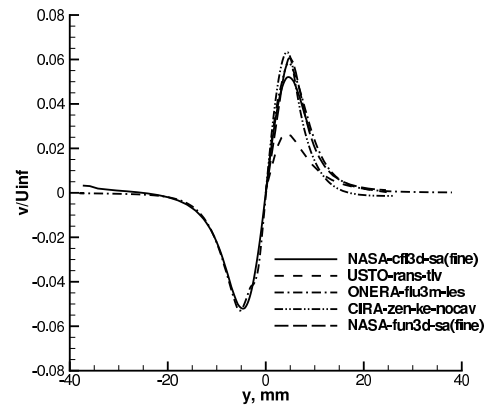
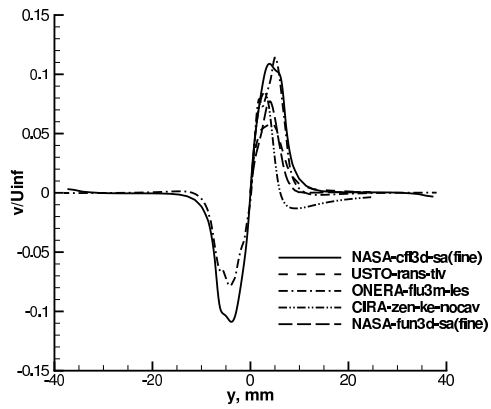
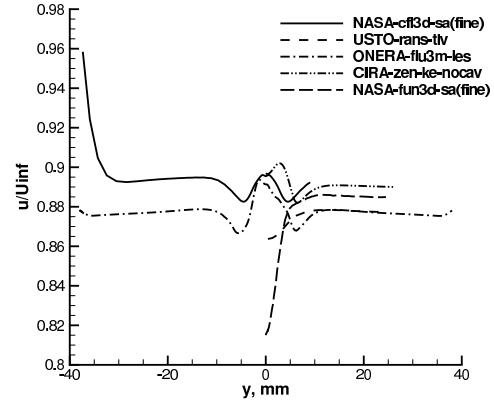
Average velocity at $x=101.6\text{mm}$, $y=0$, all codes:



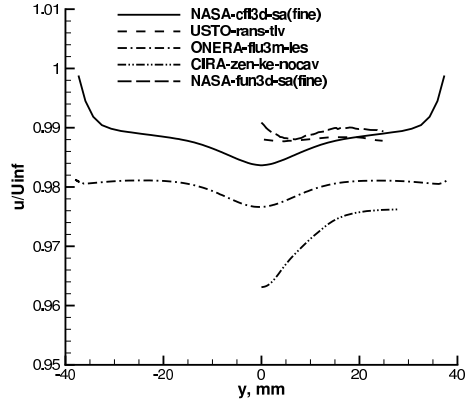
Average velocity at $x=57.15\text{mm}$, $z=5\text{mm}$,
all codes:



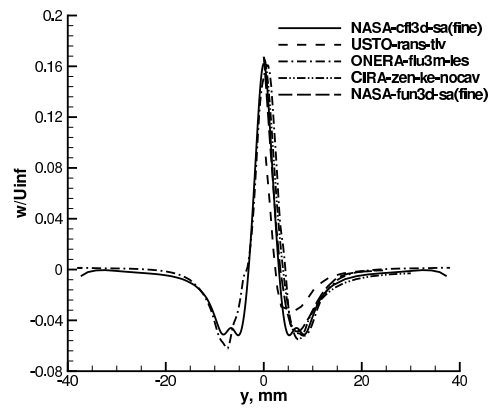
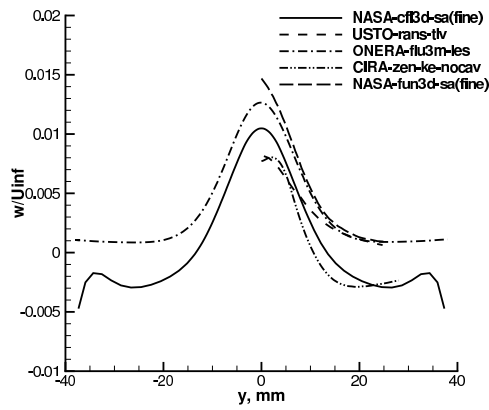
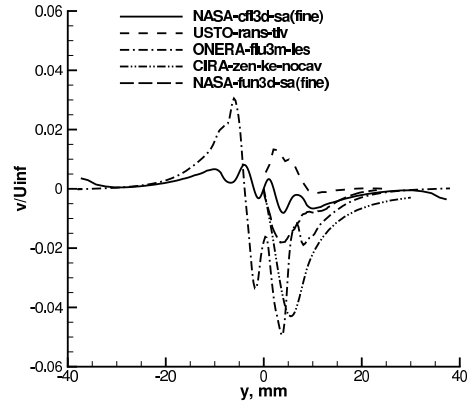
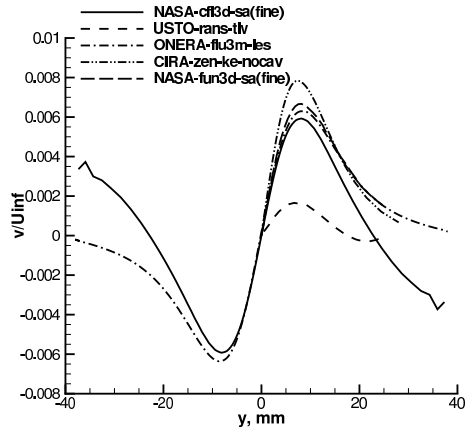
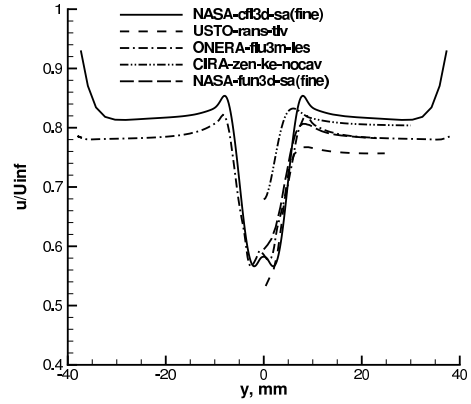
Average velocity at $x=57.15\text{mm}$, $z=10\text{mm}$,
all codes:



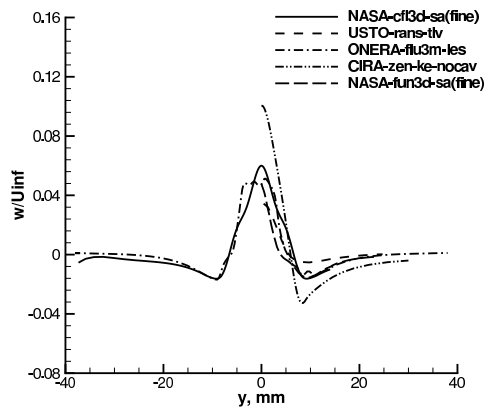
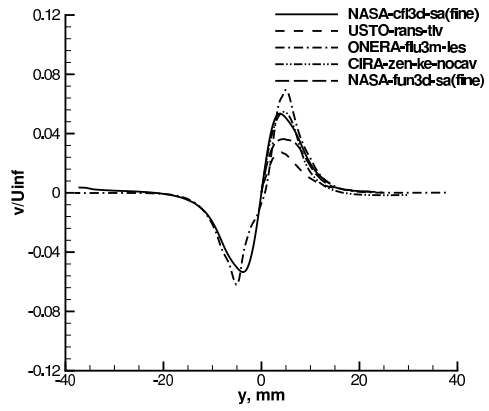
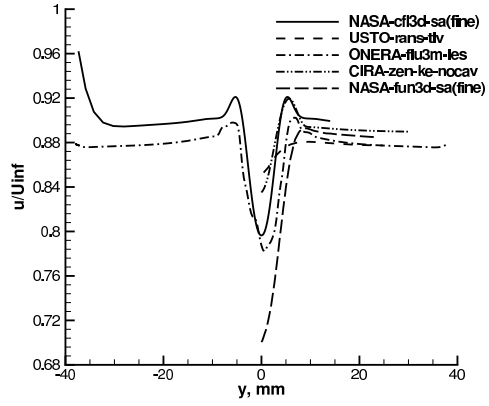
Average velocity at $x=57.15\text{mm}$, $z=20\text{mm}$,
all codes:



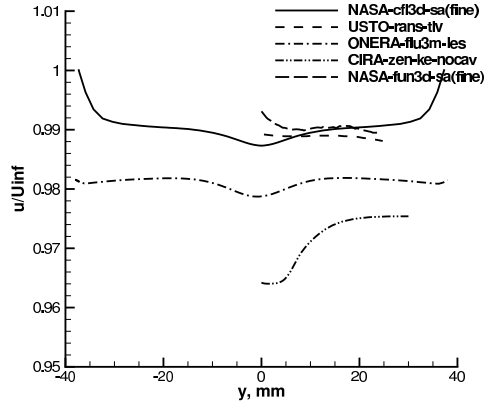
Average velocity at $x=63.5\text{mm}$, $z=5\text{mm}$,
all codes:



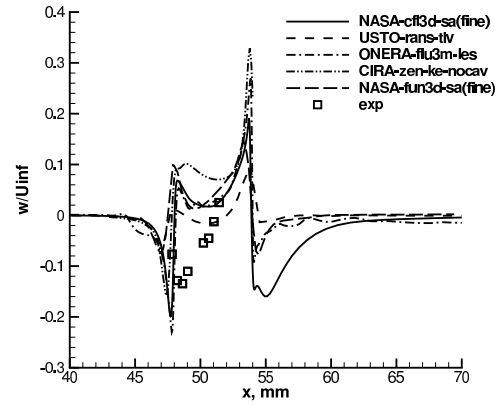
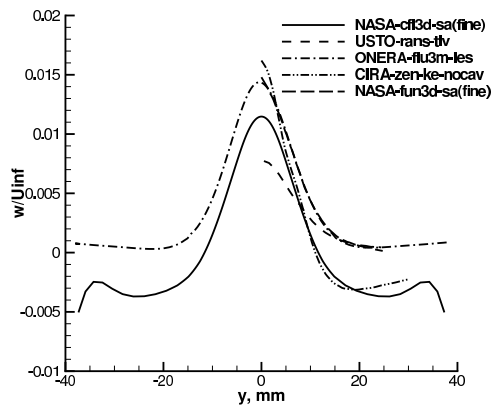
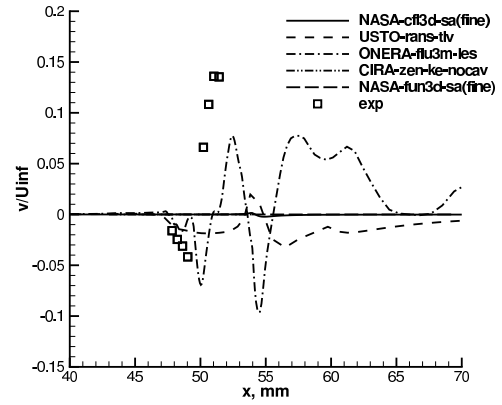
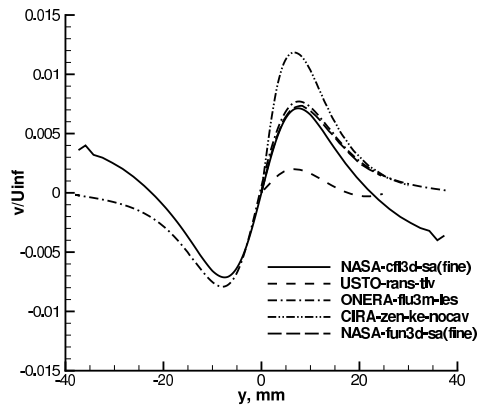
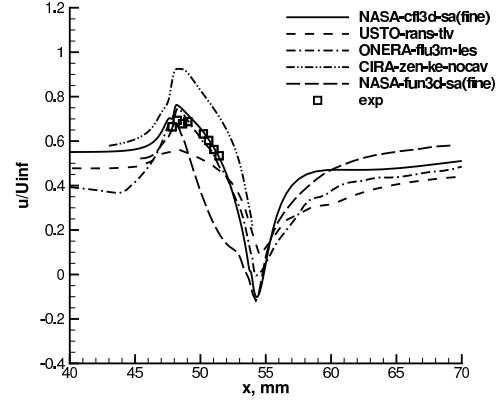
Average velocity at $x=63.5\text{mm}$, $z=10\text{mm}$,
all codes:



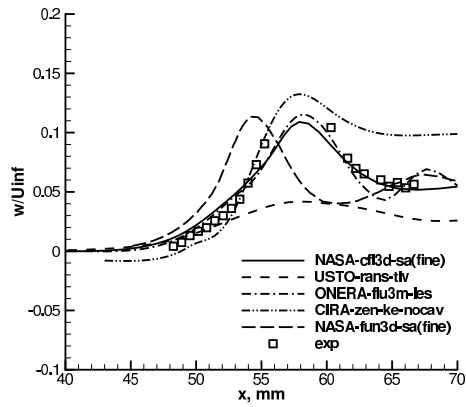
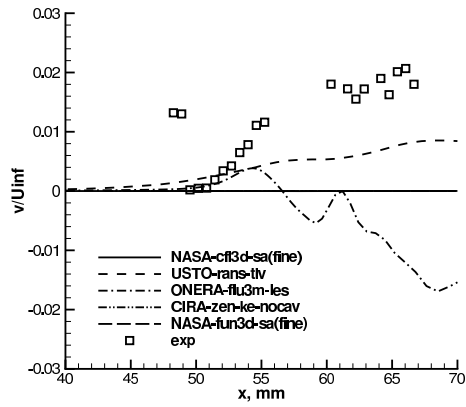
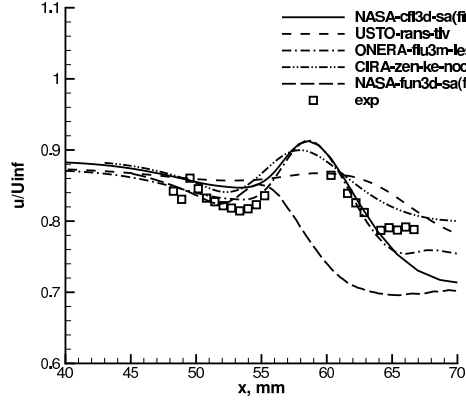
Average velocity at $x=63.5\text{mm}$, $z=20\text{mm}$,
all codes:



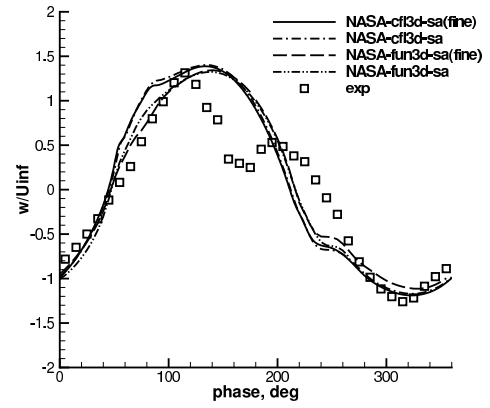
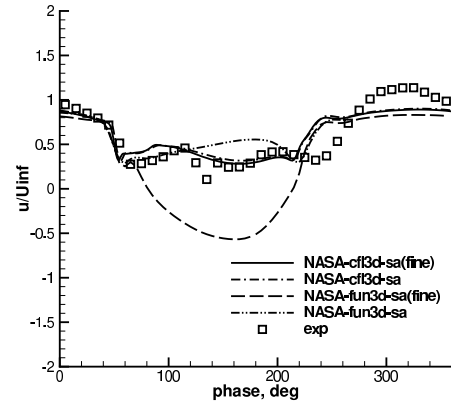
Average velocity at $z=0.4\text{mm}$, $y=0$, all codes:



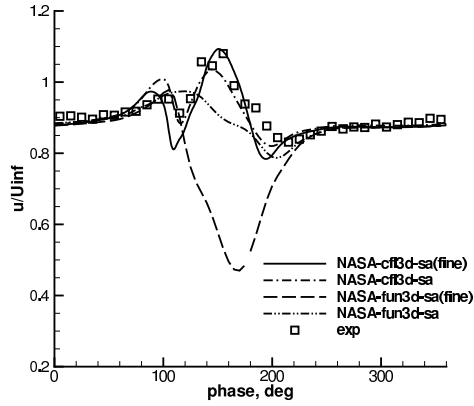
Average velocity at $z=10\text{mm}$, $y=0$, all codes:



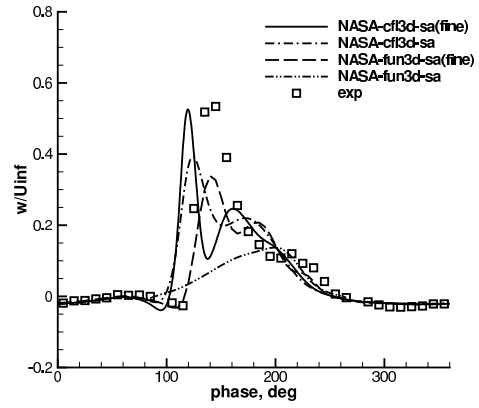
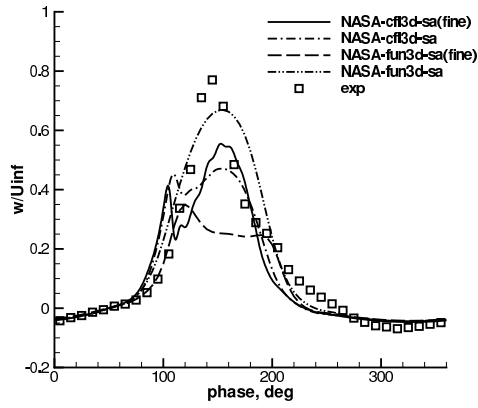
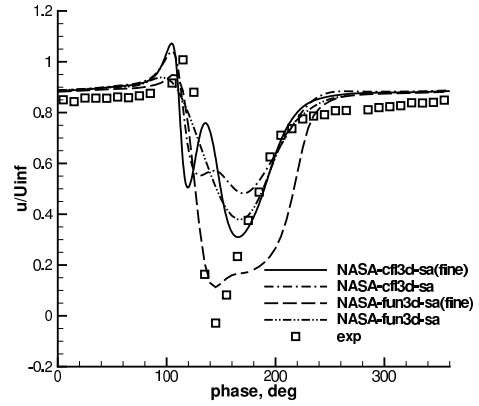
Grid effect on time histories at $x=50.63\text{mm}$, $y=0$, $z=0.4\text{mm}$:



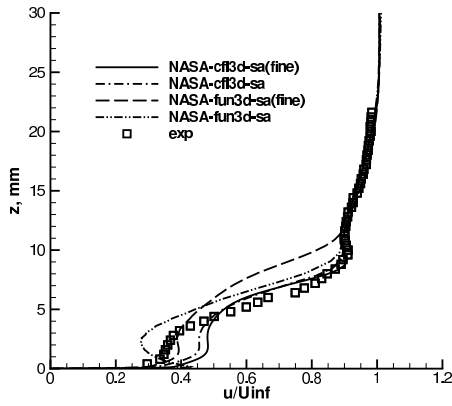
Grid effect on time histories at
x=57.15mm, y=0, z=10mm:



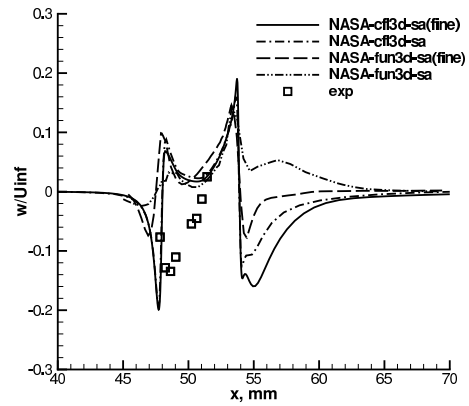
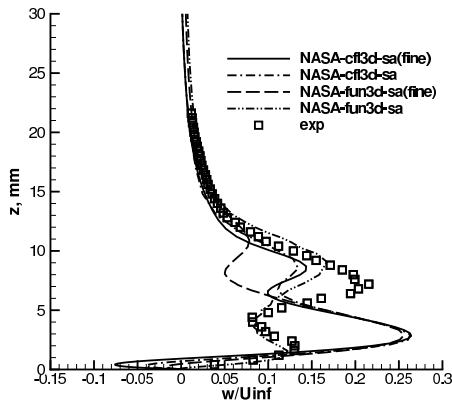
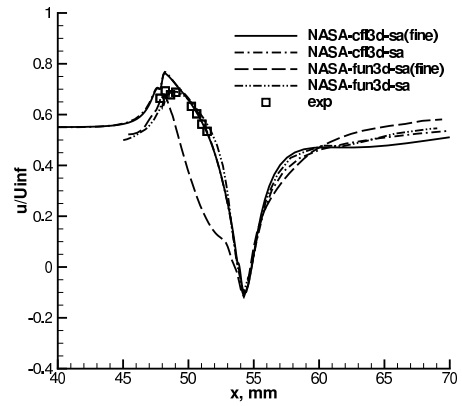
Grid effect on time histories at
x=63.5mm, y=0, z=10mm:



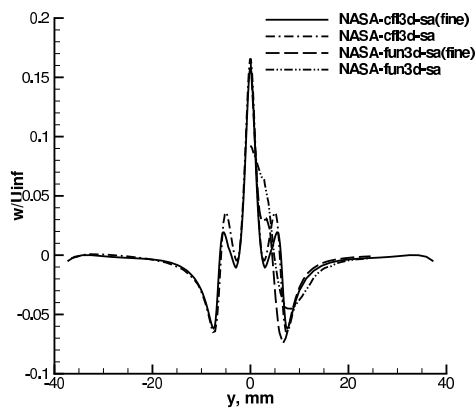
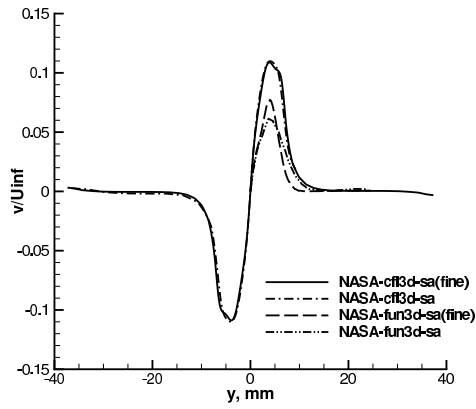
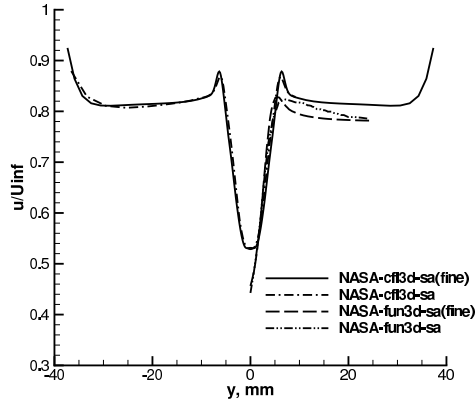
Grid effect on average velocity at
 $x=57.15\text{mm}$, $y=0$:



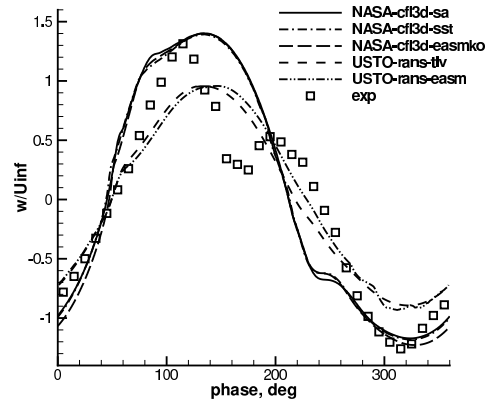
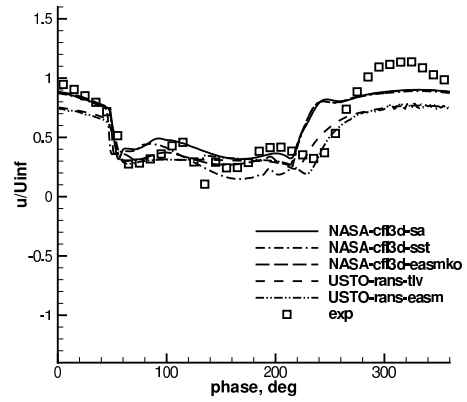
Grid effect on average velocity at
 $z=0.4\text{mm}$, $y=0$:



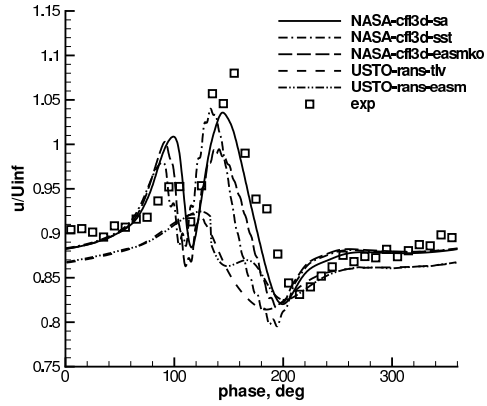
Grid effect on average velocity at
 $x=57.15\text{mm}$, $z=5\text{mm}$:



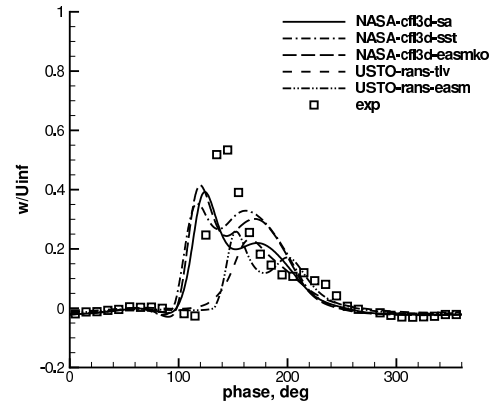
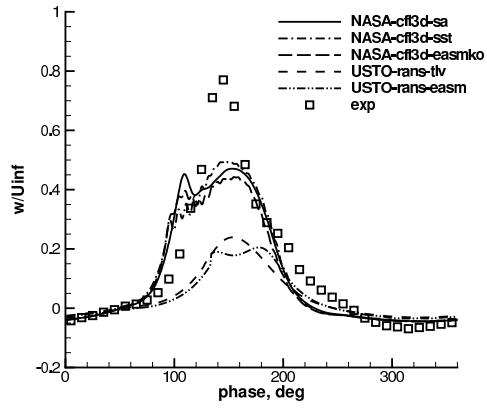
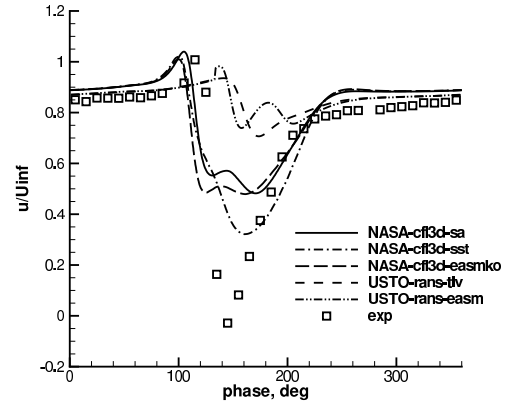
Turbulence model effect on time histories at
 $x=50.63\text{mm}$, $y=0$, $z=0.4\text{mm}$:



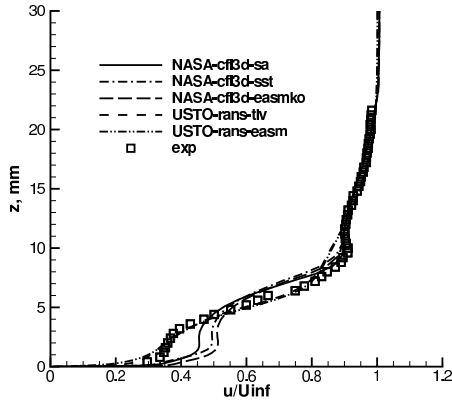
Turbulence model effect on time histories at
x=57.15mm, y=0, z=10mm:



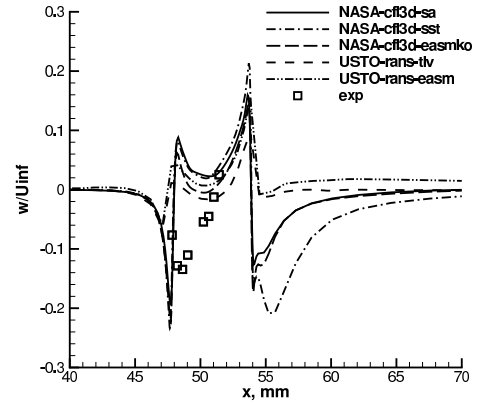
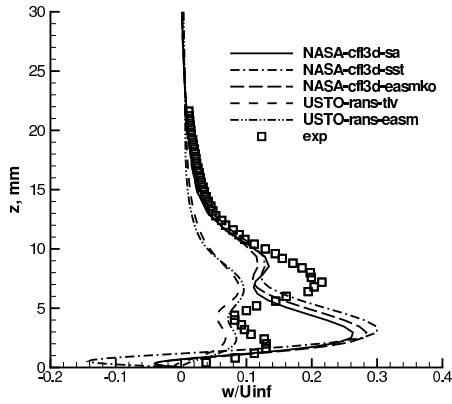
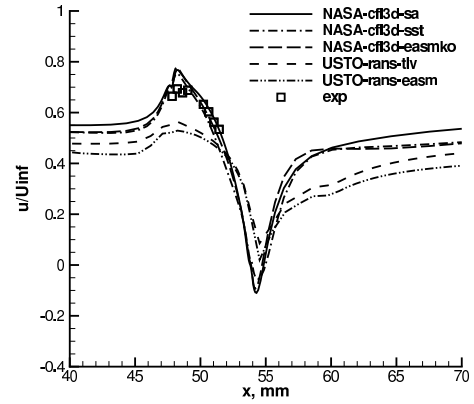
Turbulence model effect on time histories at
x=63.5mm, y=0, z=10mm:



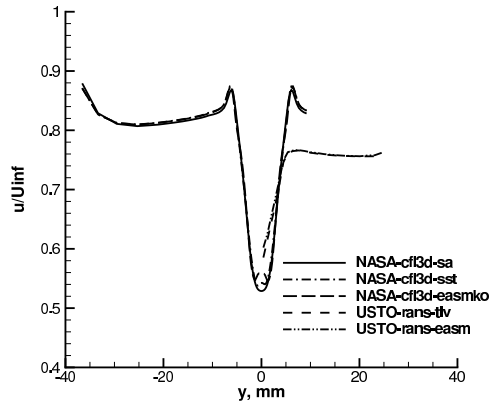
Turbulence model effect on average velocity at
 $x=57.15\text{mm}$, $y=0$:



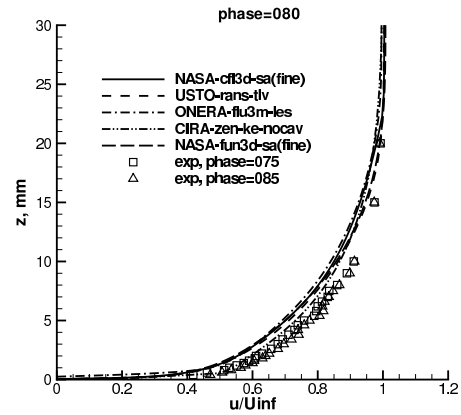
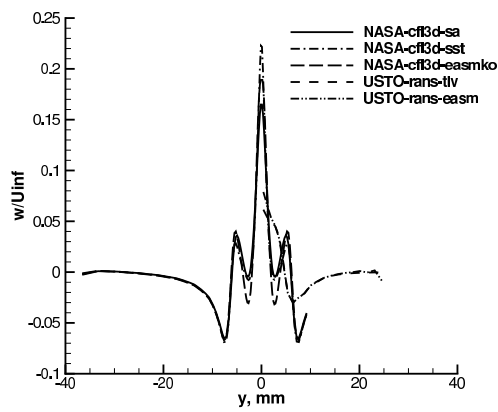
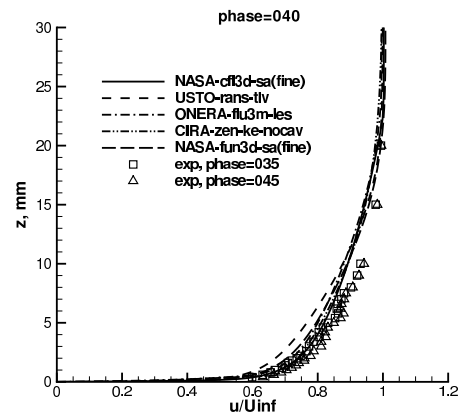
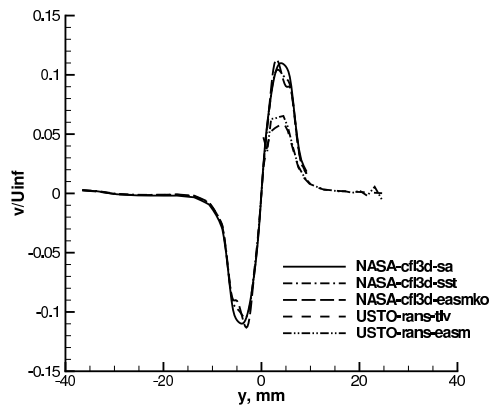
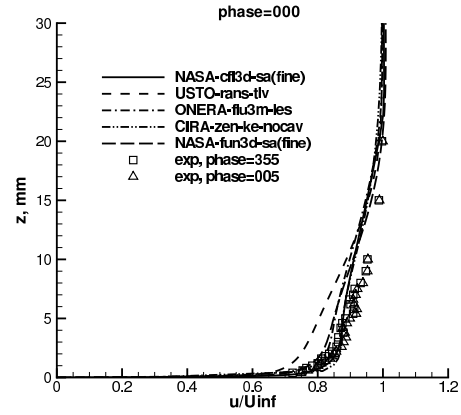
Turbulence model effect on average velocity at
 $z=0.4\text{mm}$, $y=0$:

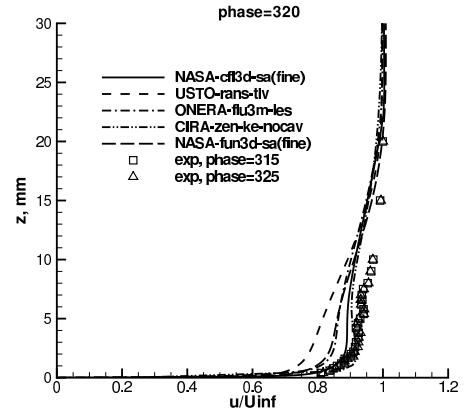
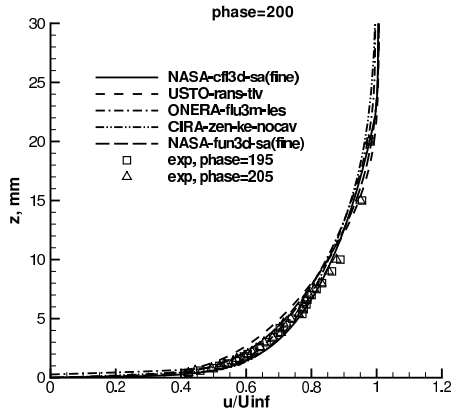
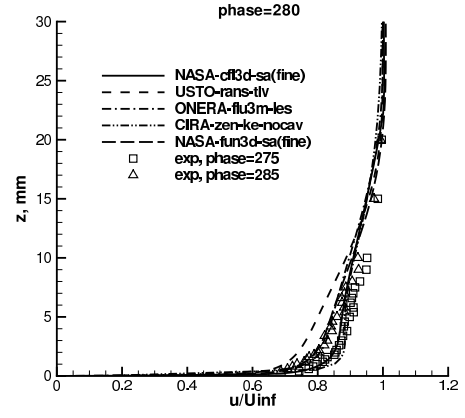
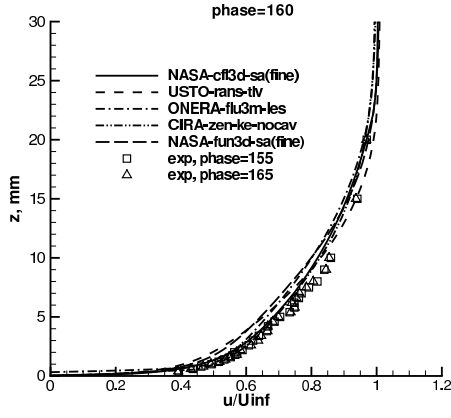
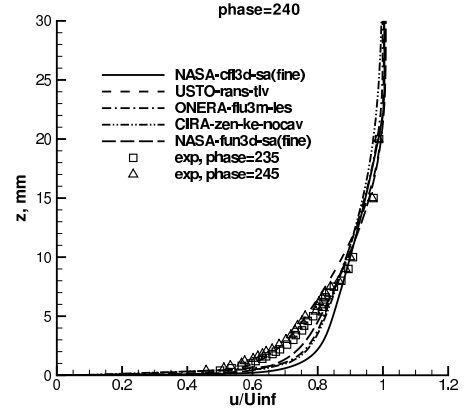
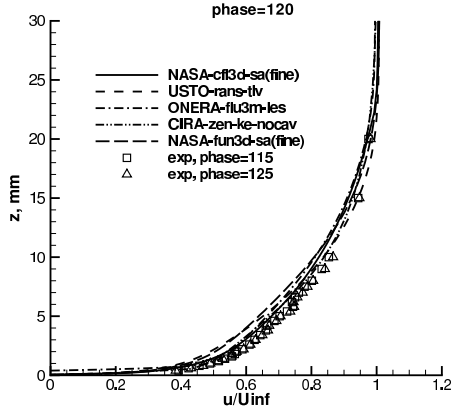


Turbulence model effect on average velocity at
x=57.15mm, z=5mm:

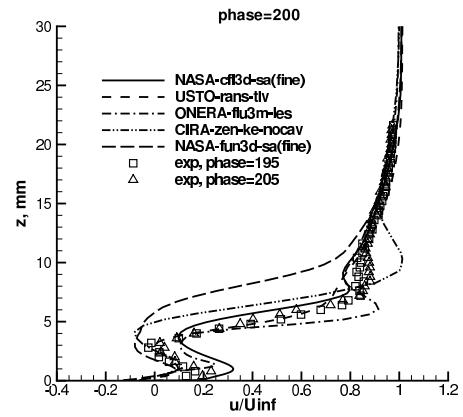
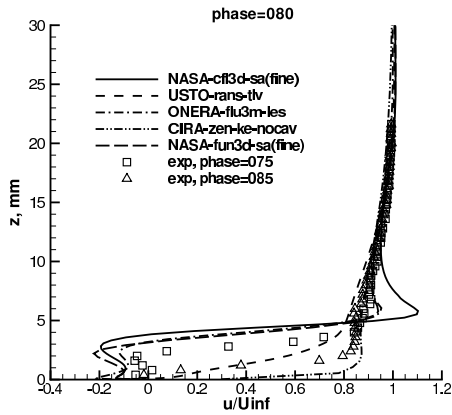
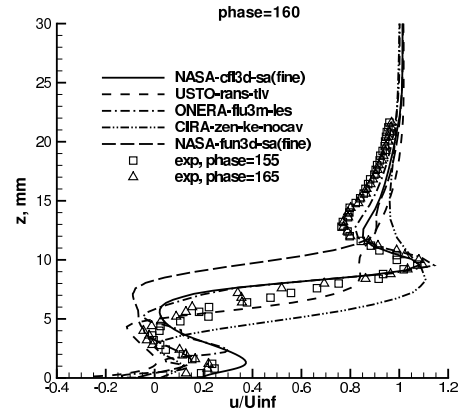
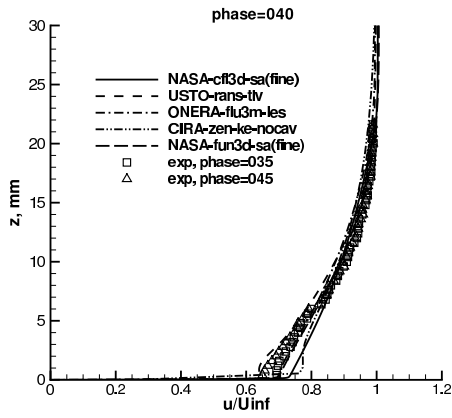
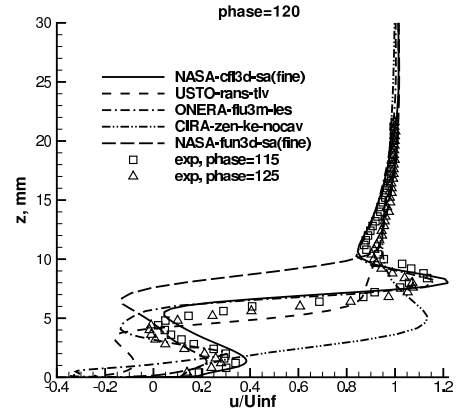
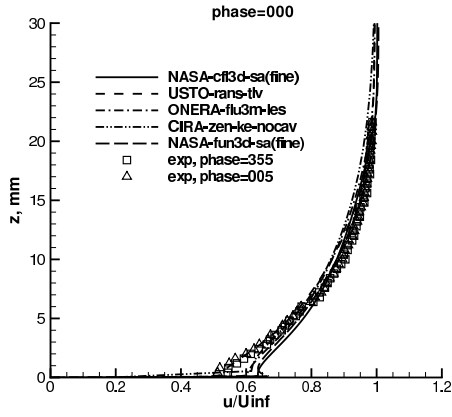


Phase-averaged u-velocity at x=44.45mm, y=0,
all codes:

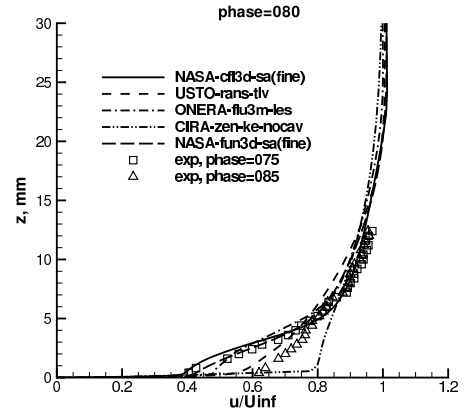
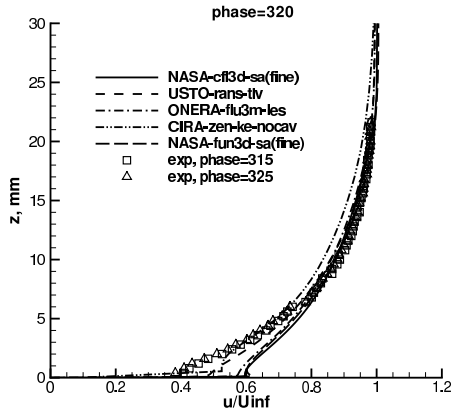
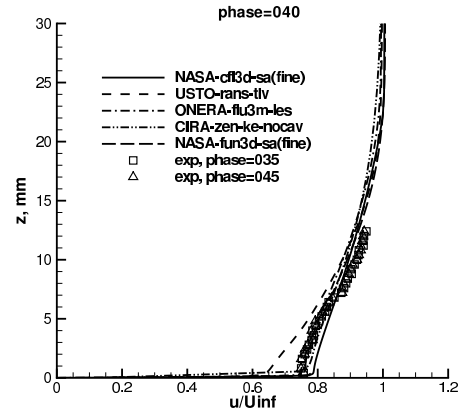
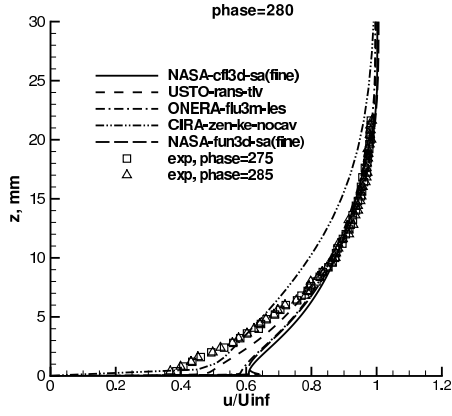
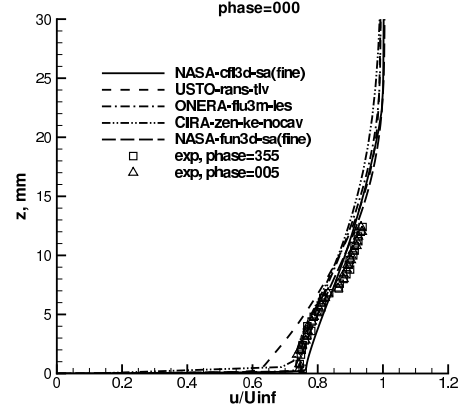
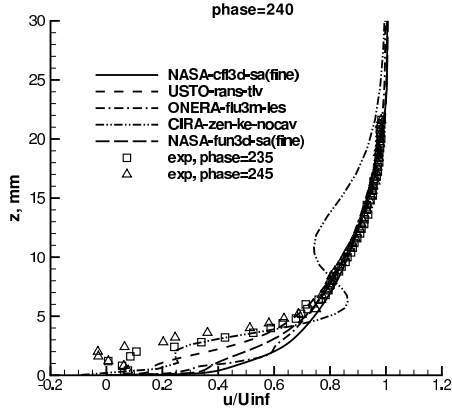


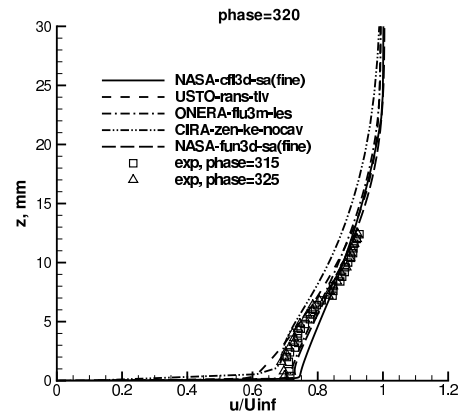
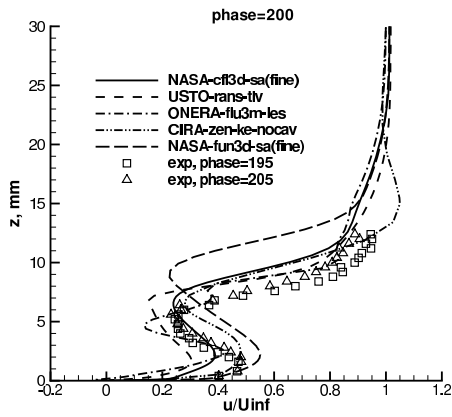
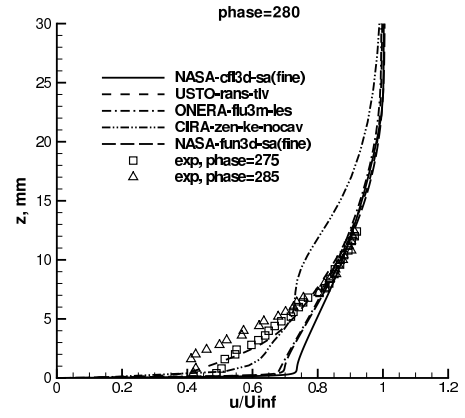
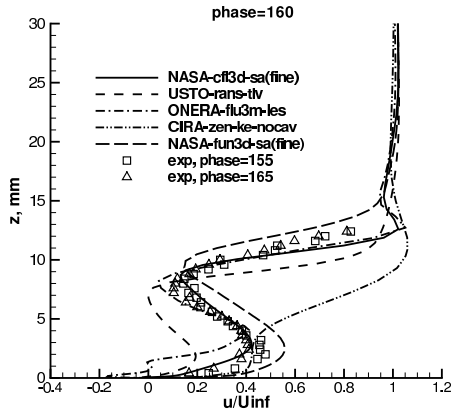
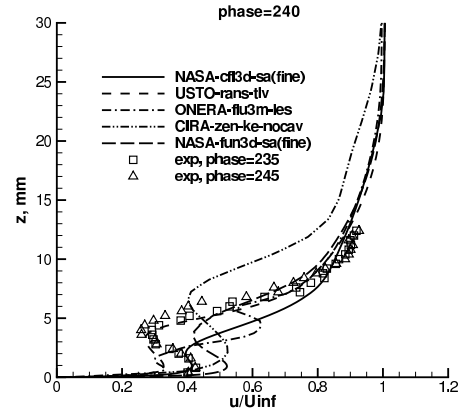
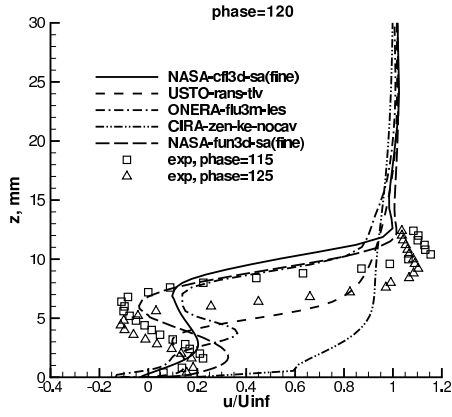


Phase-averaged u-velocity at $x=57.15\text{mm}$, $y=0$,
all codes:

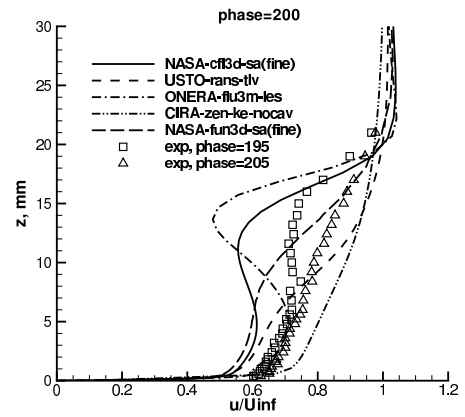
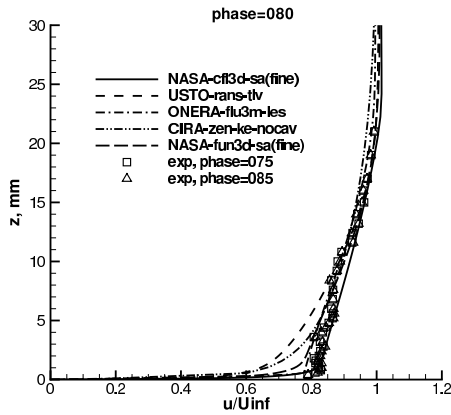
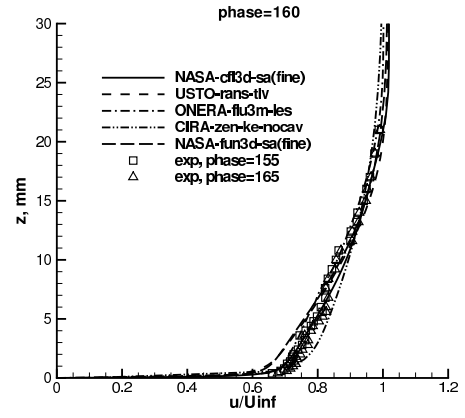
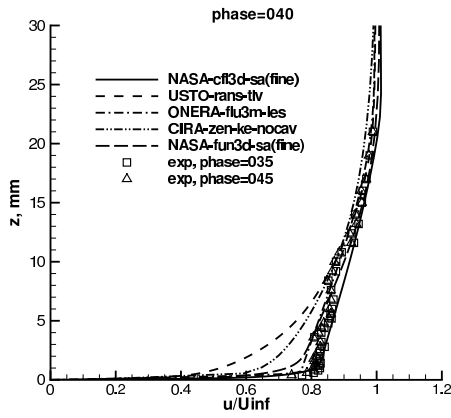
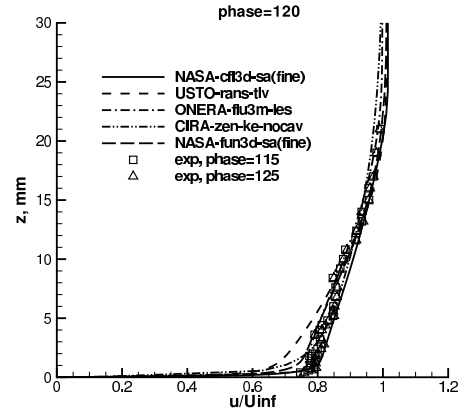
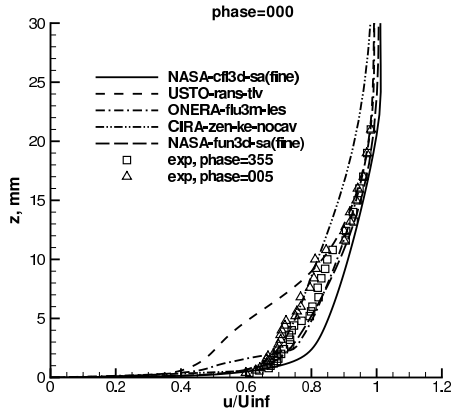


Phase-averaged u-velocity at $x=63.5\text{mm}$, $y=0$,
all codes:

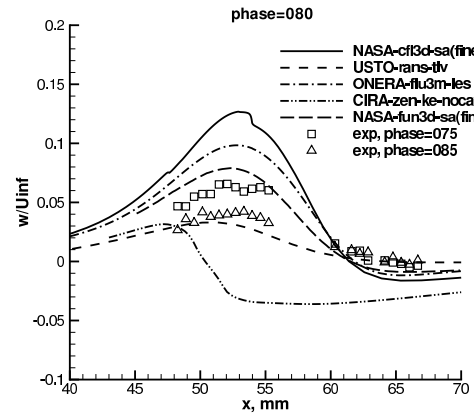
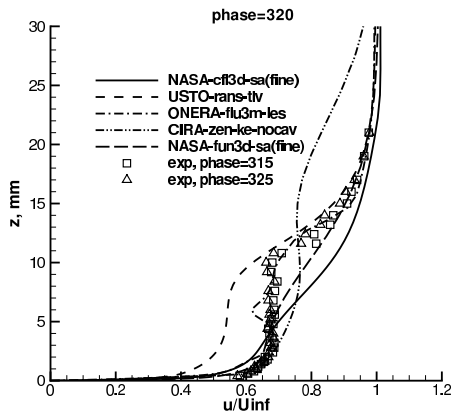
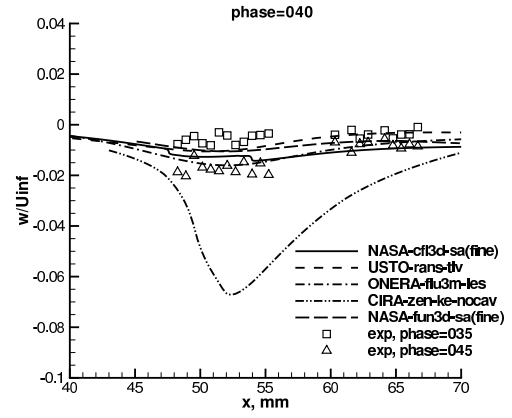
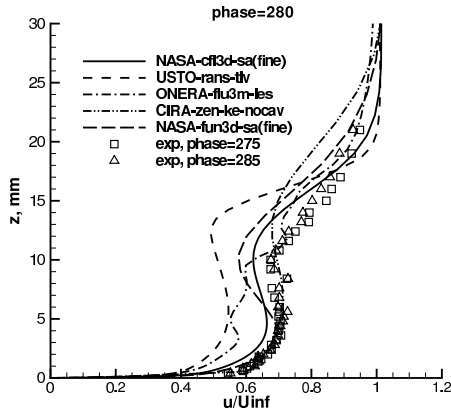
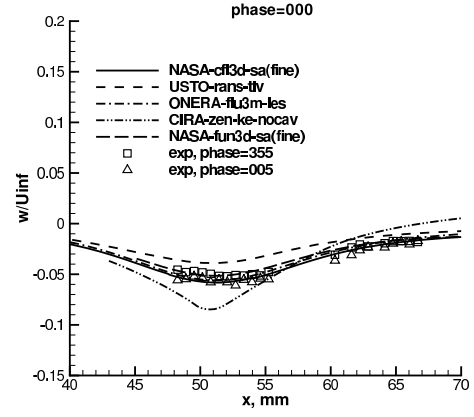
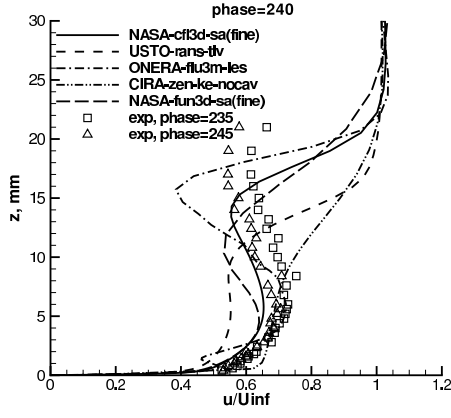


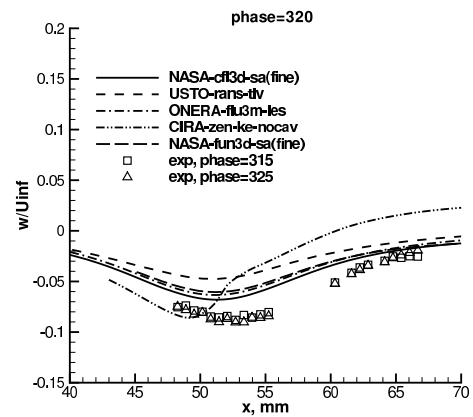
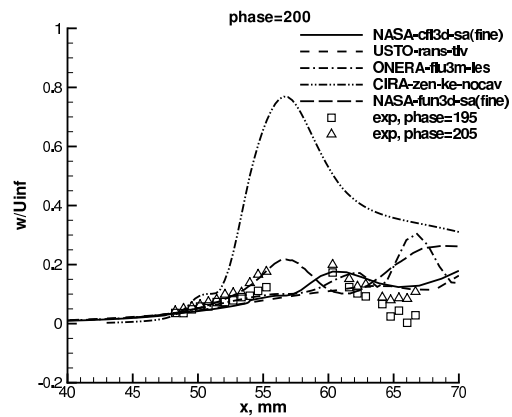
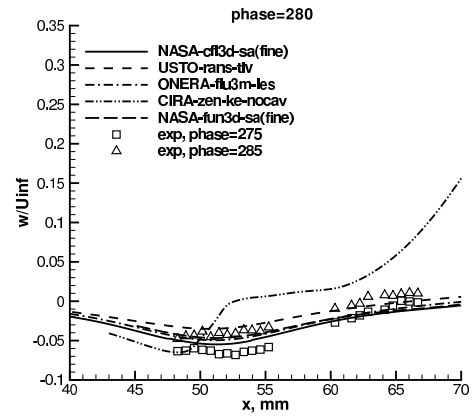
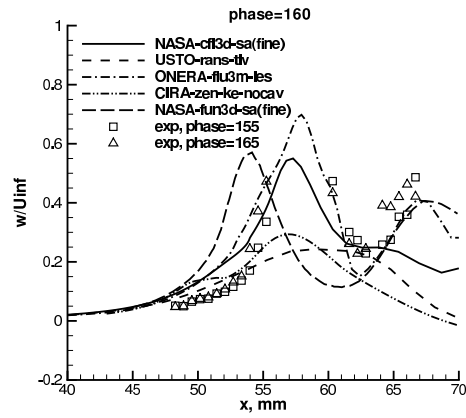
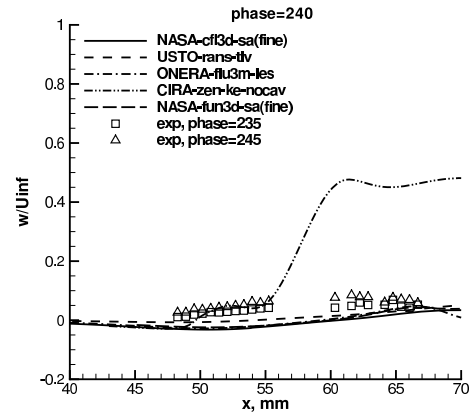
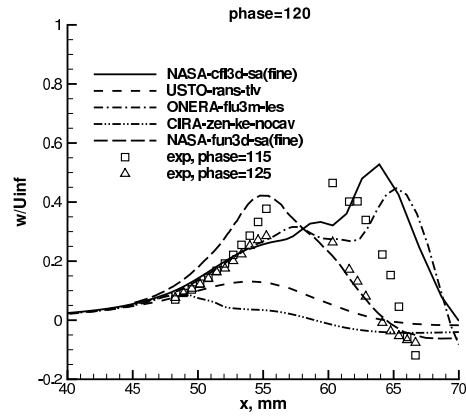


Phase-averaged u-velocity at $x=101.6\text{mm}$, $y=0$,
all codes:

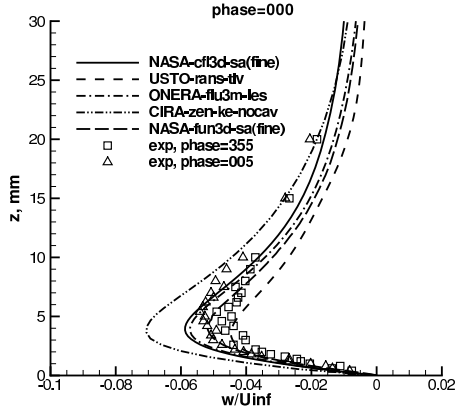


Phase-averaged w-velocity at $z=10\text{mm}$, $y=0$,
all codes:

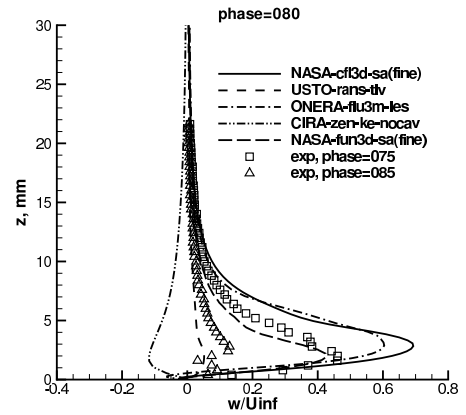
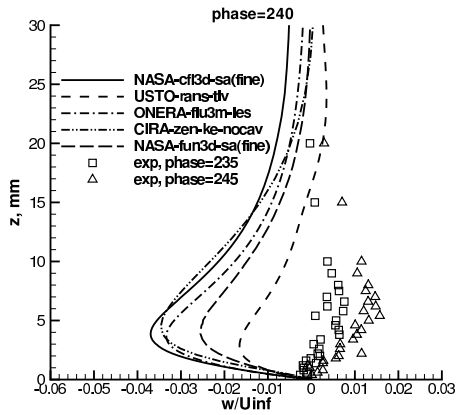
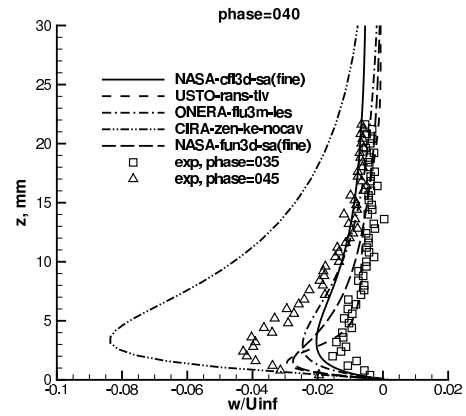
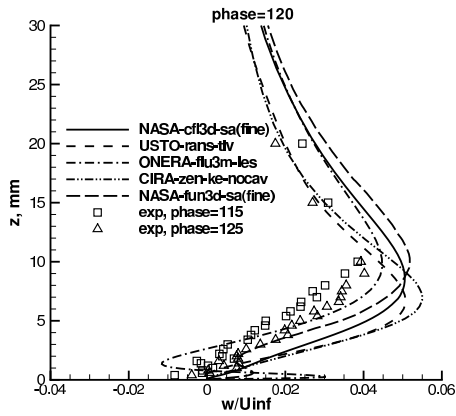
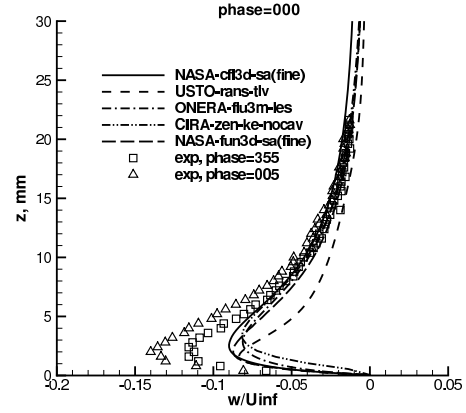


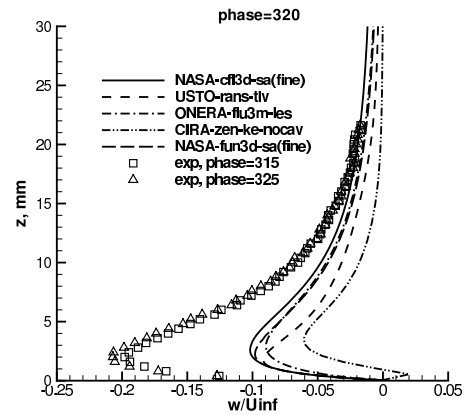
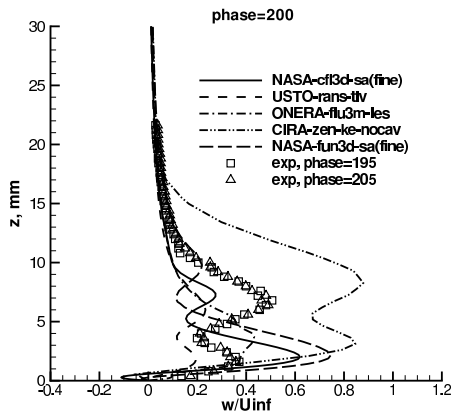
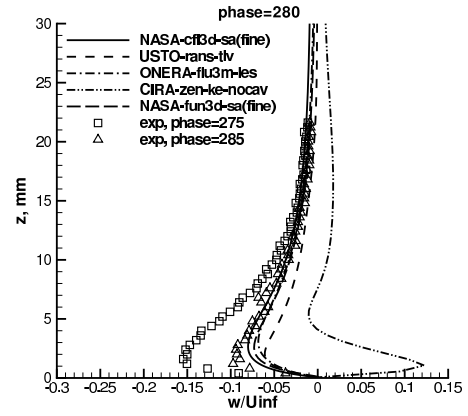
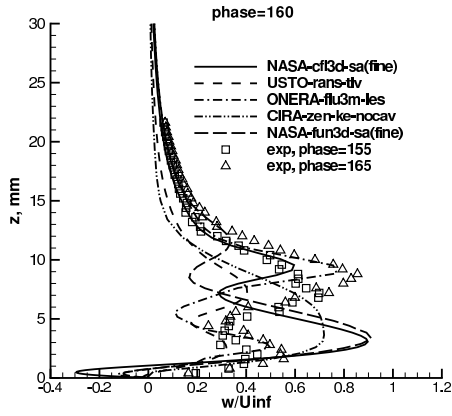
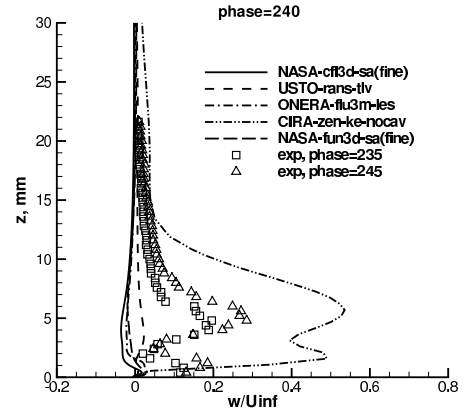
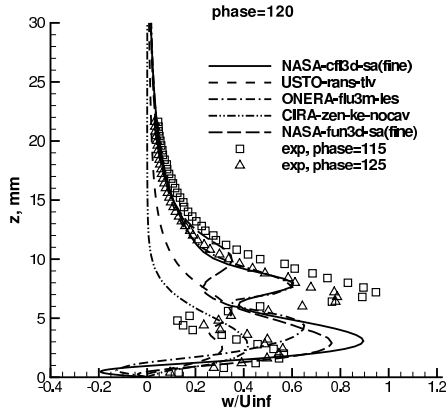


Phase-averaged w-velocity at $x=44.45\text{mm}$, $y=0$,
all codes:

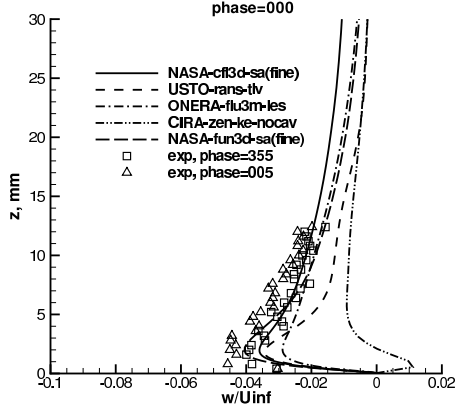


Phase-averaged w-velocity at $x=57.15\text{mm}$, $y=0$,
all codes:

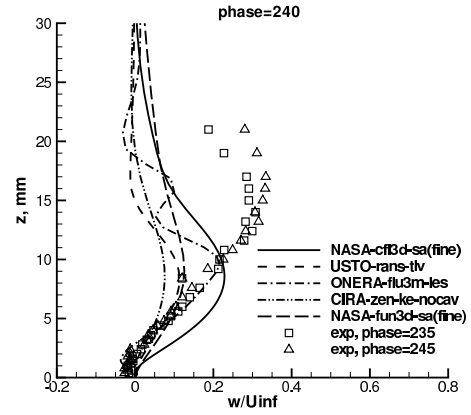
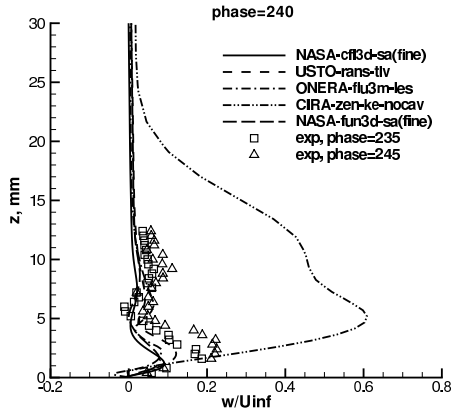
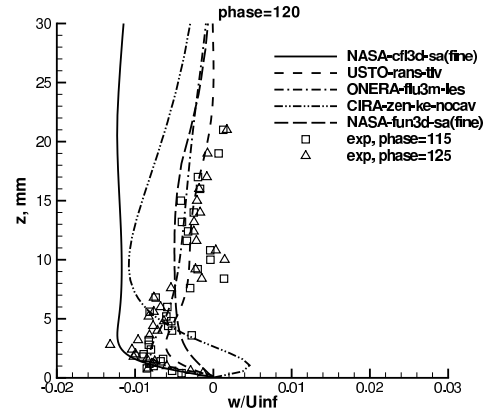
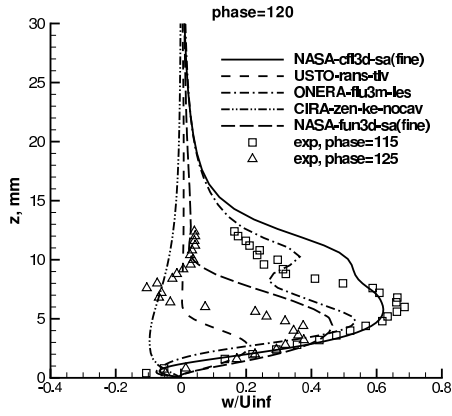
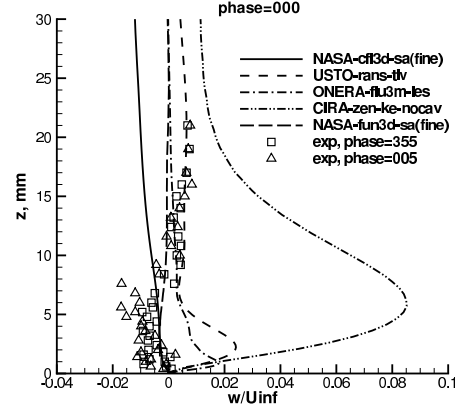




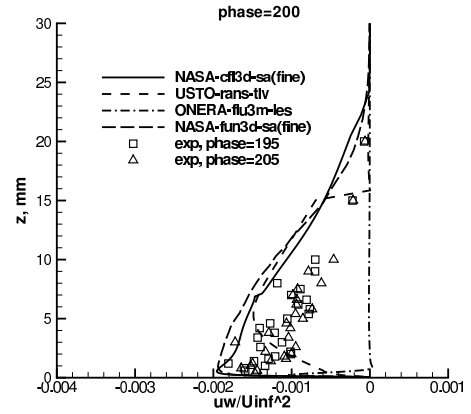
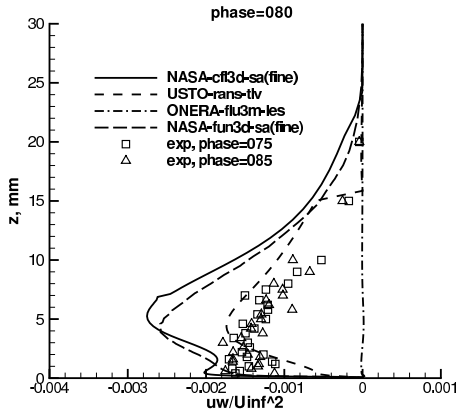
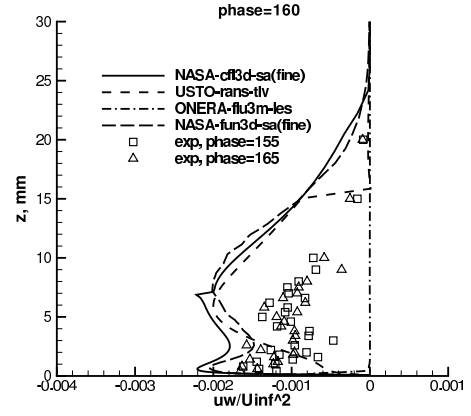
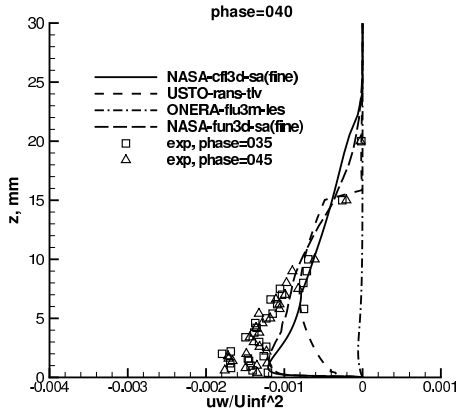
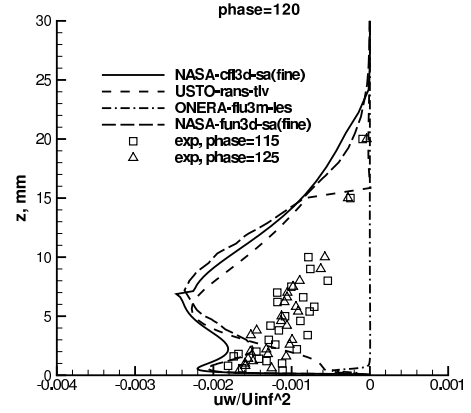
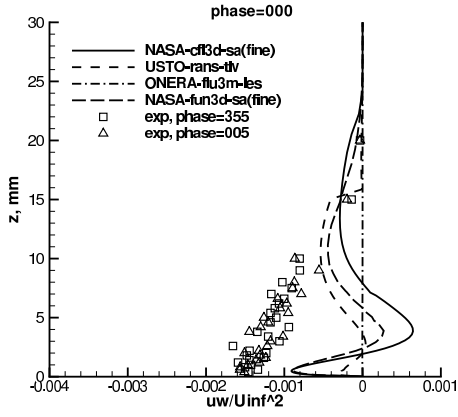
Phase-averaged w-velocity at $x=63.5\text{mm}$, $y=0$,
all codes:



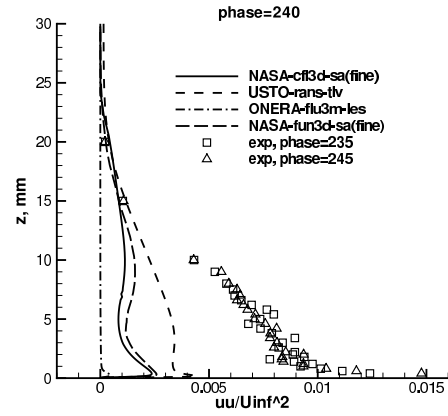
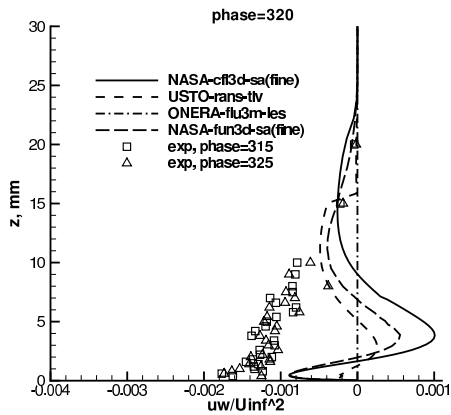
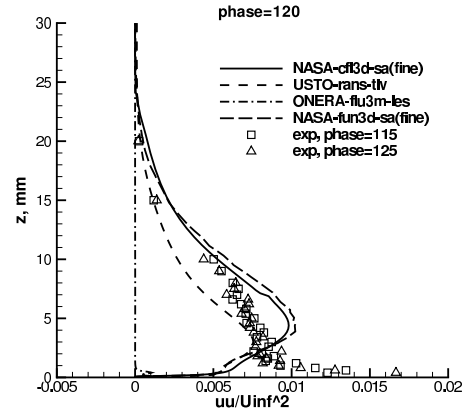
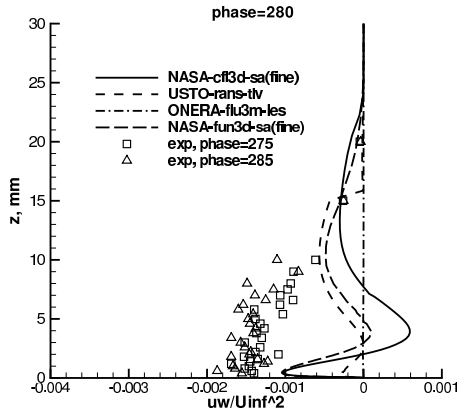
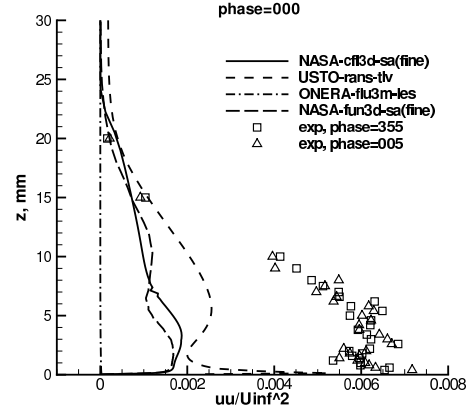
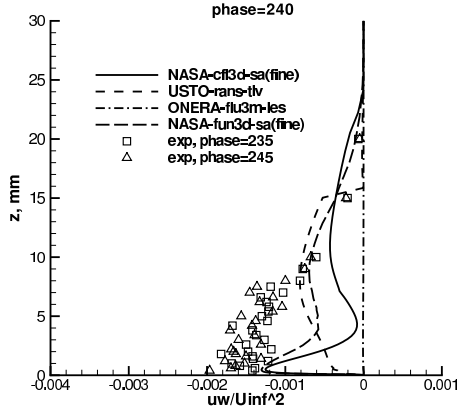
Phase-averaged w-velocity at $x=101.6\text{mm}$, $y=0$,
all codes:



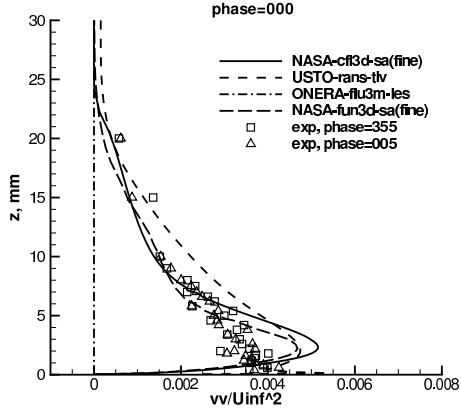
Phase-averaged $u'w'$ turbulent stress at
 $x=44.45\text{mm}$, $y=0$, all codes:



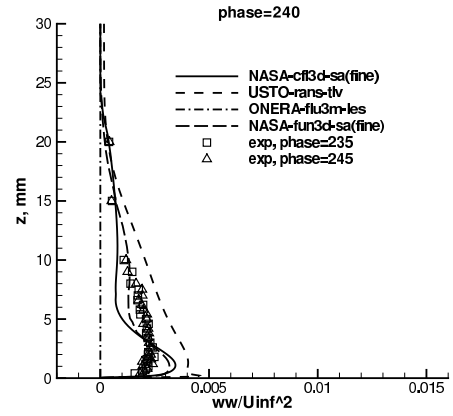
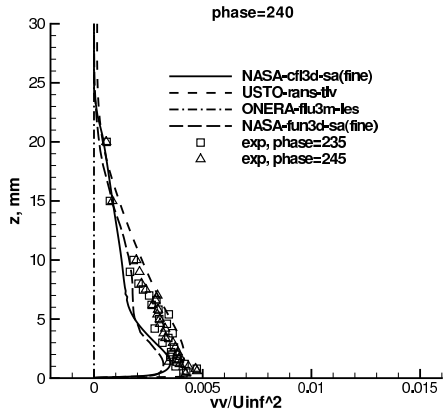
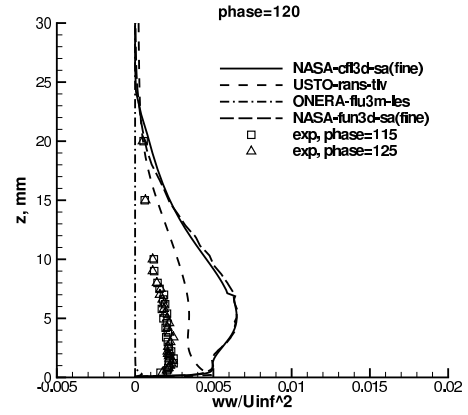
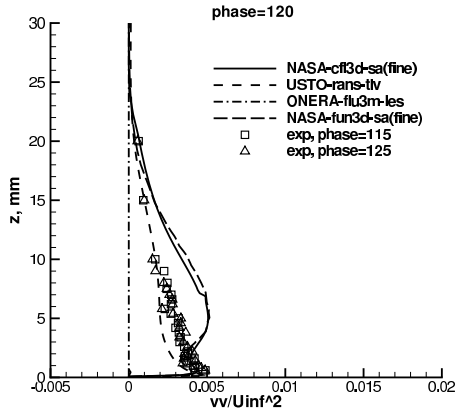
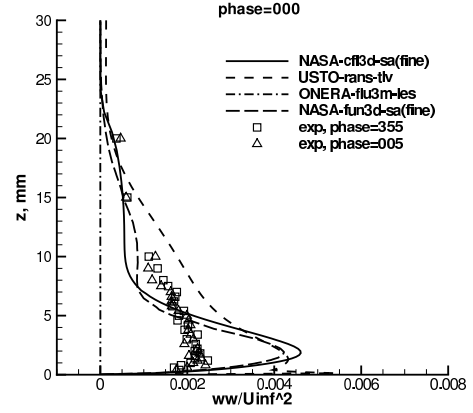
Phase-averaged $u'u'$ turbulent stress at
 $x=44.45\text{mm}$, $y=0$, all codes:



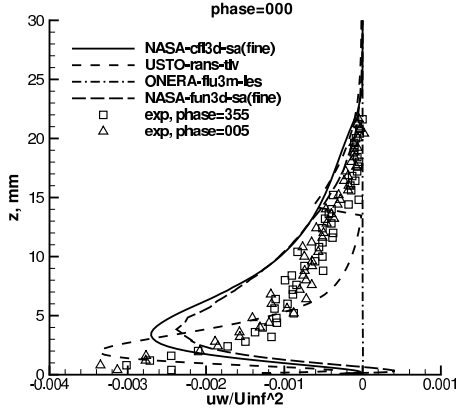
Phase-averaged $v'v'$ turbulent stress at
 $x=44.45\text{mm}$, $y=0$, all codes:



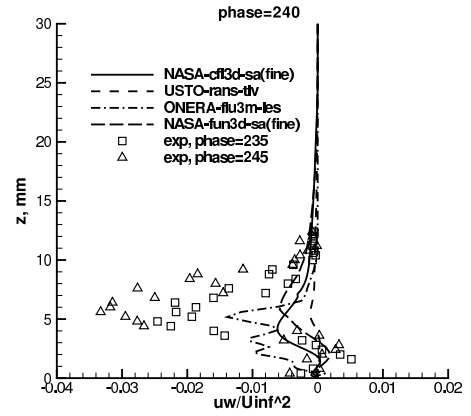
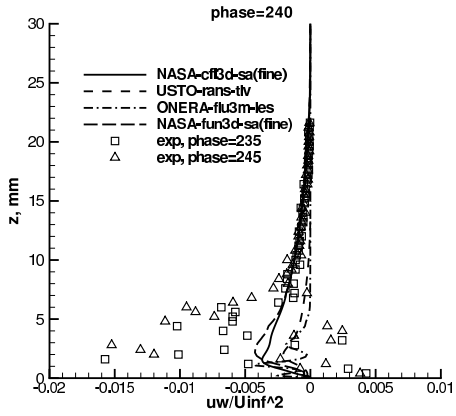
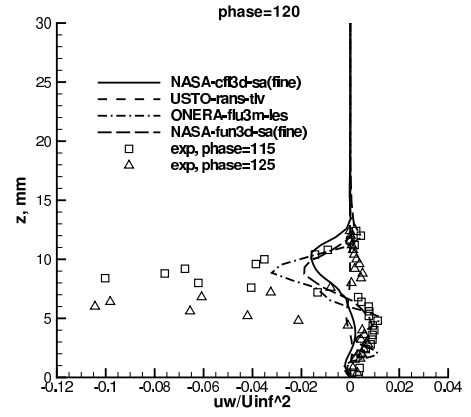
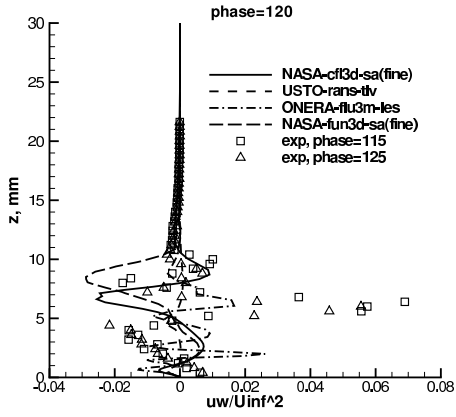
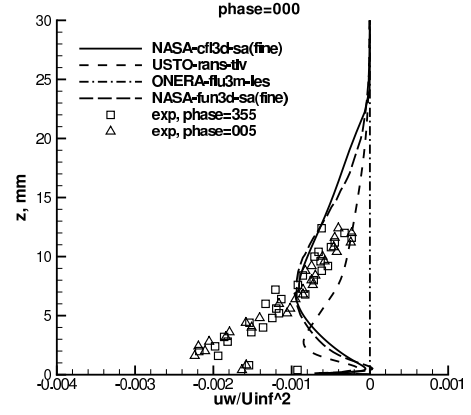
Phase-averaged $w'w'$ turbulent stress at
 $x=44.45\text{mm}$, $y=0$, all codes:



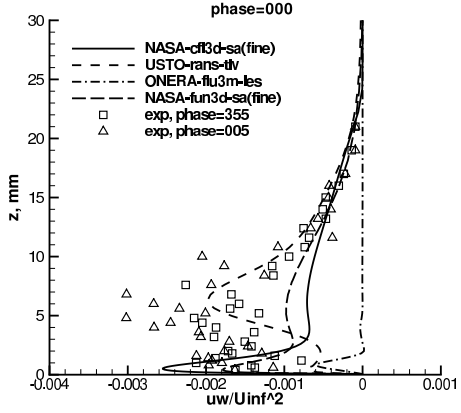
Phase-averaged $u'w'$ turbulent stress at
 $x=57.15\text{mm}$, $y=0$, all codes:



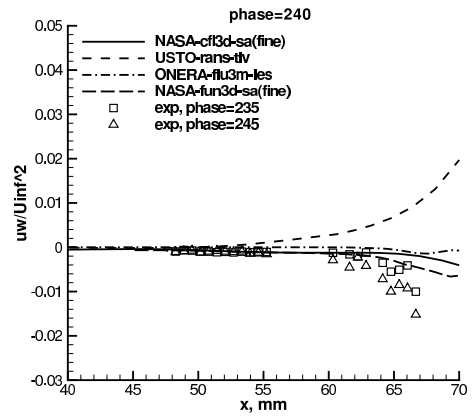
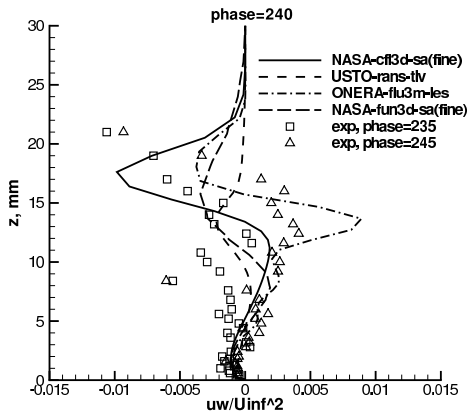
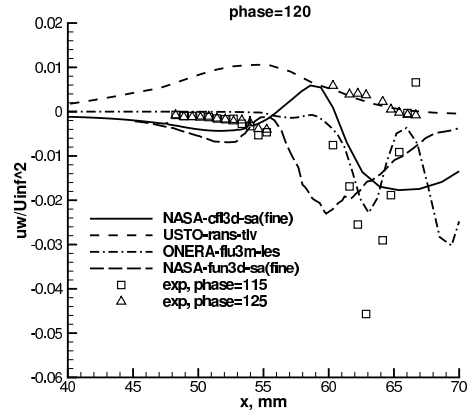
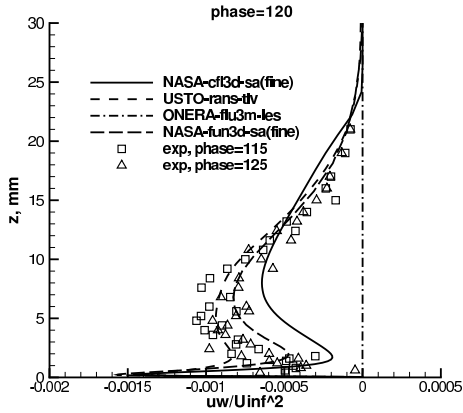
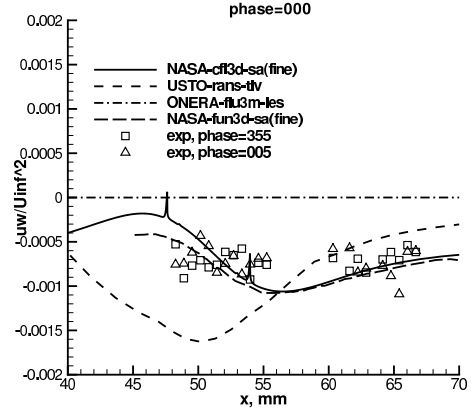
Phase-averaged $u'w'$ turbulent stress at
 $x=63.5\text{mm}$, $y=0$, all codes:



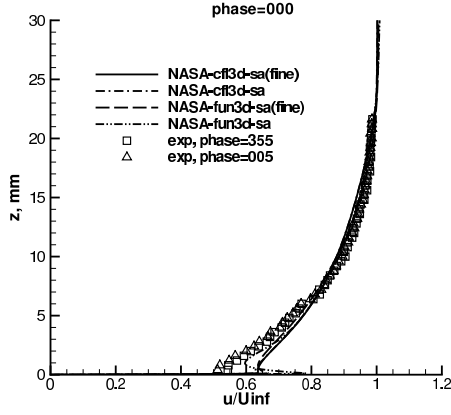
Phase-averaged $u'w'$ turbulent stress at
 $x=101.6\text{mm}$, $y=0$, all codes:



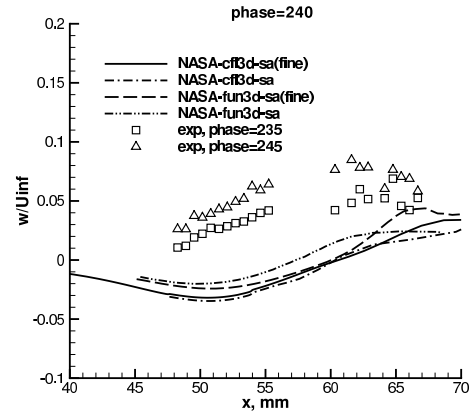
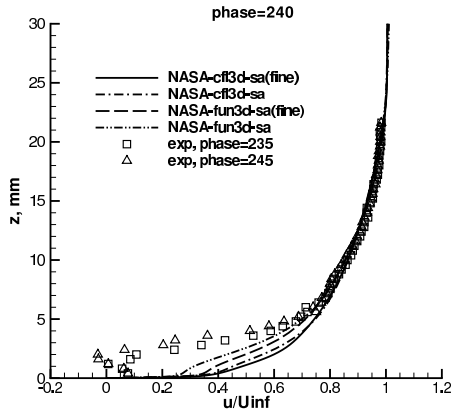
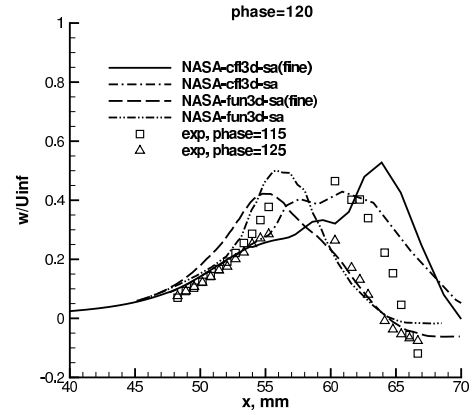
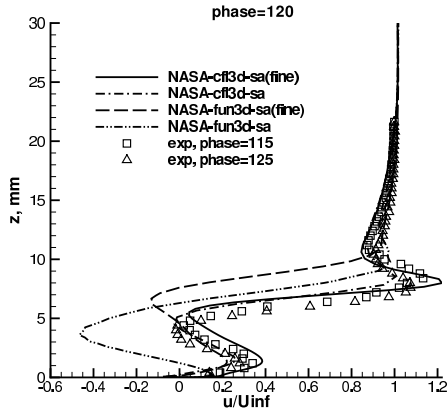
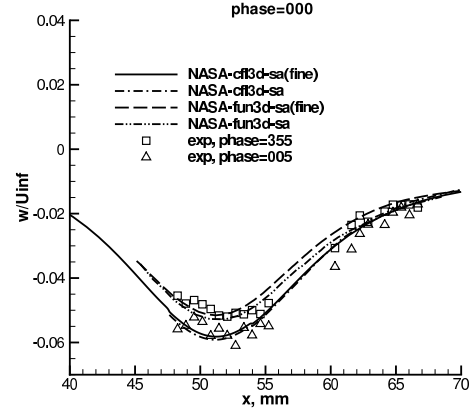
Phase-averaged $u'w'$ turbulent stress at
 $z=10\text{mm}$, $y=0$, all codes:



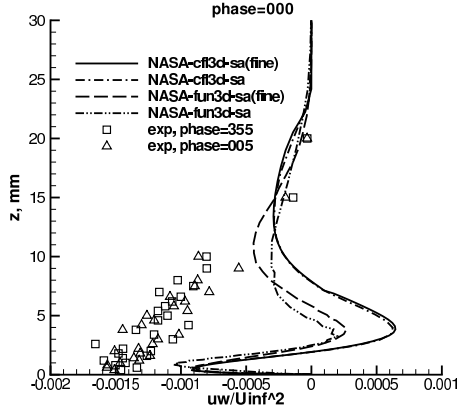
Grid effect on phase-averaged u-velocity at
 $x=57.15\text{mm}$, $y=0$:



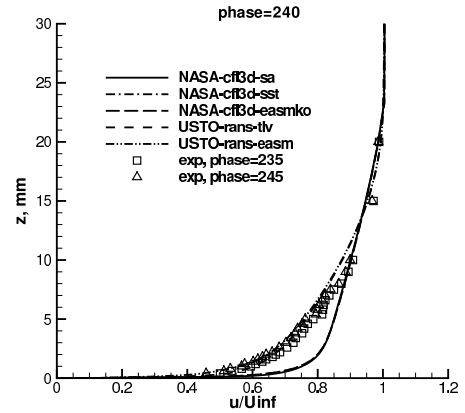
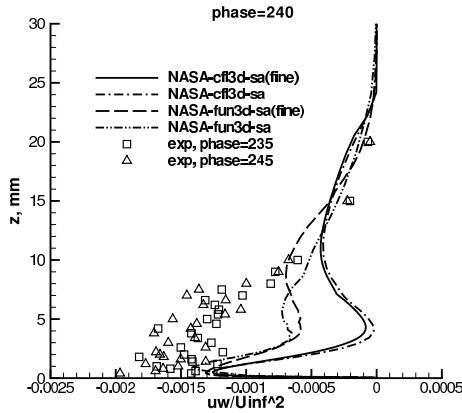
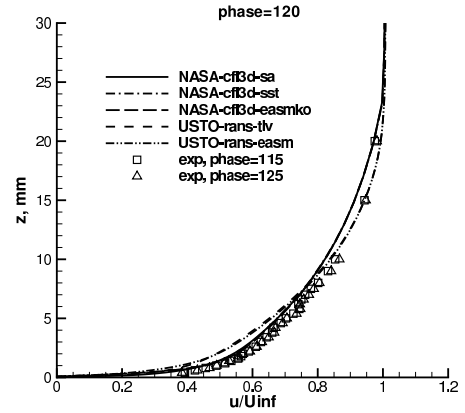
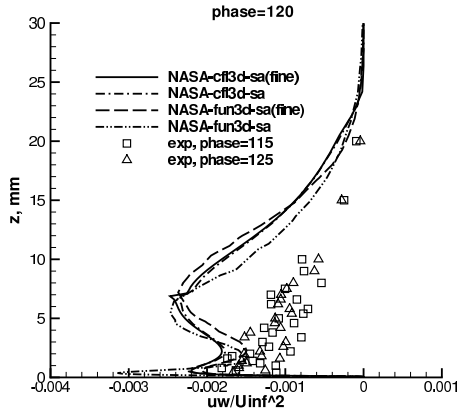
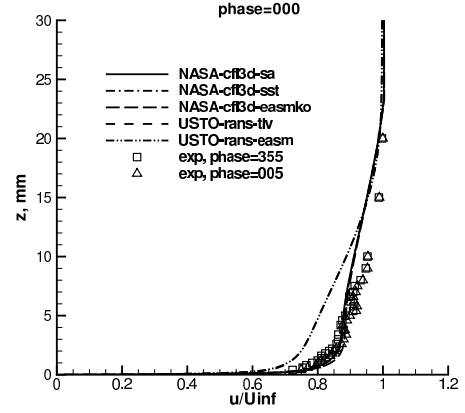
Grid effect on phase-averaged w-velocity at
 $z=10\text{mm}$, $y=0$:



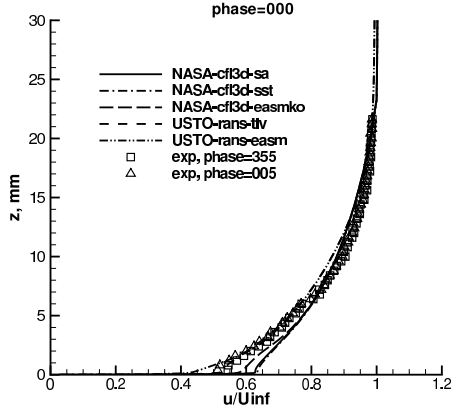
Grid effect on phase-averaged $u'w'$ turbulent stress at $x=44.45\text{mm}$, $y=0$:



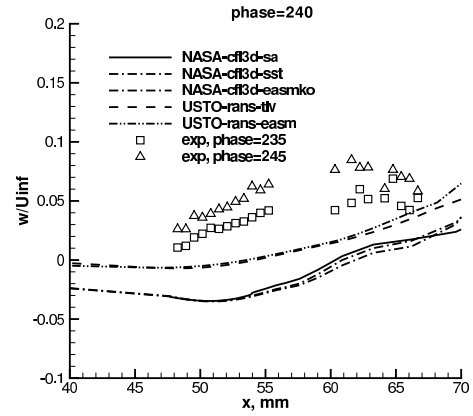
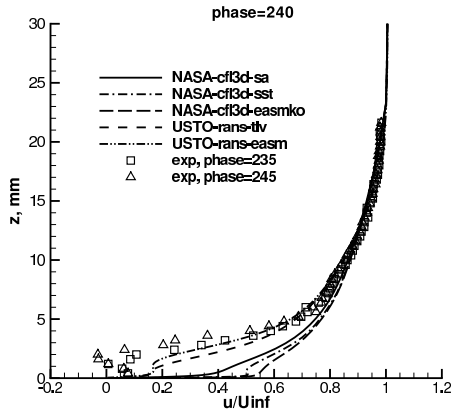
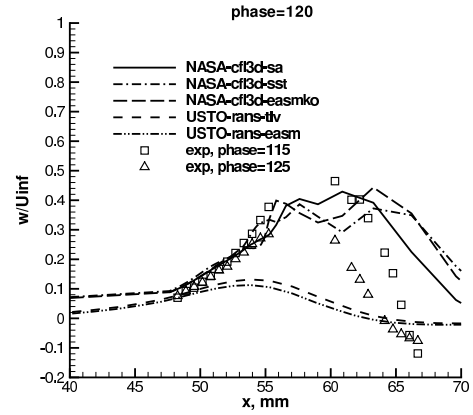
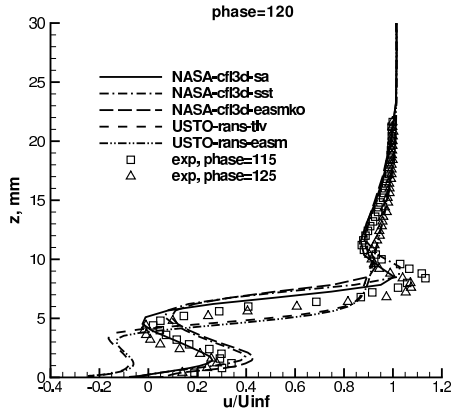
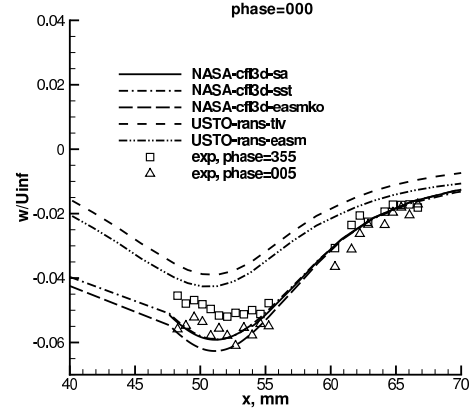
Turbulence model effect on phase-averaged u-velocity at $x=44.45\text{mm}$, $y=0$:



Turbulence model effect on phase-averaged
u-velocity at $x=57.15\text{mm}$, $y=0$:



Turbulence model effect on phase-averaged
w-velocity at $z=10\text{mm}$, $y=0$:



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

