

Section 11

Sample I/O

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Example System Time Step, I

Rocstar: System Time Step : 6

Rocstar: CurrentTime, CurrentTimeStep, ZoomFactor: 0.500000000000000024E-04
0.100000000000000008E-04 1.0000000000000000

ROCCOM: CALL(0) FullyCoupled.update_solutions

Conservatively transferring from FluidBufNG.ts to SolidBuf.ts

Conservatively transferring from FluidBufNG.mdot_tmp to SolidBuf.rb

RocFrac ::	Time Step	Dt			
RocFrac ::	-----				
RocFrac ::	31	0.1692E-05	0.1692E-05	0.1000E-04	0.5169E-04
RocFrac ::	32	0.3385E-05	0.1692E-05	0.1000E-04	0.5338E-04
RocFrac ::	33	0.5077E-05	0.1692E-05	0.1000E-04	0.5508E-04
RocFrac ::	34	0.6769E-05	0.1692E-05	0.1000E-04	0.5677E-04
RocFrac ::	35	0.8461E-05	0.1692E-05	0.1000E-04	0.5846E-04
RocFrac ::	36	0.1000E-04	0.1539E-05	0.1000E-04	0.6000E-04
RocFrac ::	END	SOLID STEP			



Example System Time Step, II

Interpolating from SolidBuf.u to FluidBufNG.total_disp

Conservatively transferring from SolidBuf.vs to FluidBufNG.vs

Conservatively transferring from SolidBuf.mdots to FluidBufNG.mdots

RFLO:	<u>time</u>	<u>delta-t</u>	<u>force-x</u>	<u>force-y</u>	<u>force-z</u>	<u>mass-in</u>	<u>mass-out</u>
RFLO:	5.59815E-05	5.9815E-06	0.0000E+00	0.0000E+00	0.0000E+00	7.6594E-01	1.6464E-02
RFLO:	6.00000E-05	4.0185E-06	0.0000E+00	0.0000E+00	0.0000E+00	6.7040E-01	1.6633E-02

ROCCOM: DONE(0)

Rocstar: iPredCorr = 1 is done

Rocstar: Success: predictor-corrector converged at time 0.600000000000000015E-04

ROCCOM: CALL(0) FullyCoupled.get_timestep

ROCCOM: DONE(0)



Performance Data

RocstarProfile0000.txt

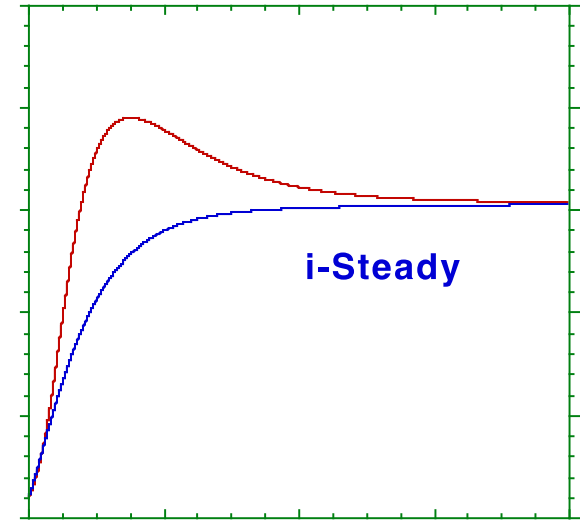
***** Solver times up to time step 10 since last output *****

Function	#calls	Time(tree)	Time(self)
Rocflo.update_solution	1	0.362181	0.361099
Rocfrac.update_solution	1	0.115063	0.114022
RFC.least_squares_transfer	4	0.10477	0.10477
RFC.interpolate	1	0.038548	0.038548
FullyCoupled.update_solutions	1	0.625328	0.00149798
PROP.propagate	1	0.0012629	0.0012629
SURF.compute_bounded_volumes	1	0.00111508	0.00111508
BLAS.sub	61	0.000668287	0.000668287
FullyCoupled.update_inbuff_bc_fl	18	0.00102282	0.000397682
BLAS.limit1	24	0.000297546	0.000297546
RocburnAPN.update_solution	1	0.000272036	0.000258207
Total(top level calls)			0.625329



Physics Module Output Data

- Module native data in Modout
- Probe files: <casename>.prb_<probenum>
 - time, rho, u, v, w, p, T



- *Rocstar* format data in Rocout

- HDF4 files:

- Volume files: fluid_<timestamp>_<processor>.hdf
- Surface files: ifluid_<type>_<timestamp>_<processor>.hdf
- <type> = b (burning), nb (inert), ni (non-interface)
- <timestamp>: xx.yyyyyy \rightarrow y.yyyyyy * 10^(xx-10)

- Examples:

- fluid_07.800000_0000.hdf
- ifluid_b_07.800000_0000.hdf
- ifluid_nb_07.800000_0000.hdf
- ifluid_ni_07.800000_0000.hdf

volume
burning surface
non-burning
non-interacting

- Similar solid, isolid and burn, iburn files



Using gnuplot With Probe Files

```
mtcampbe@ilrostar2:Modou
File Edit View Search Terminal Help

[mtcampbe@ilrostar2 Modout]$ gnuplot

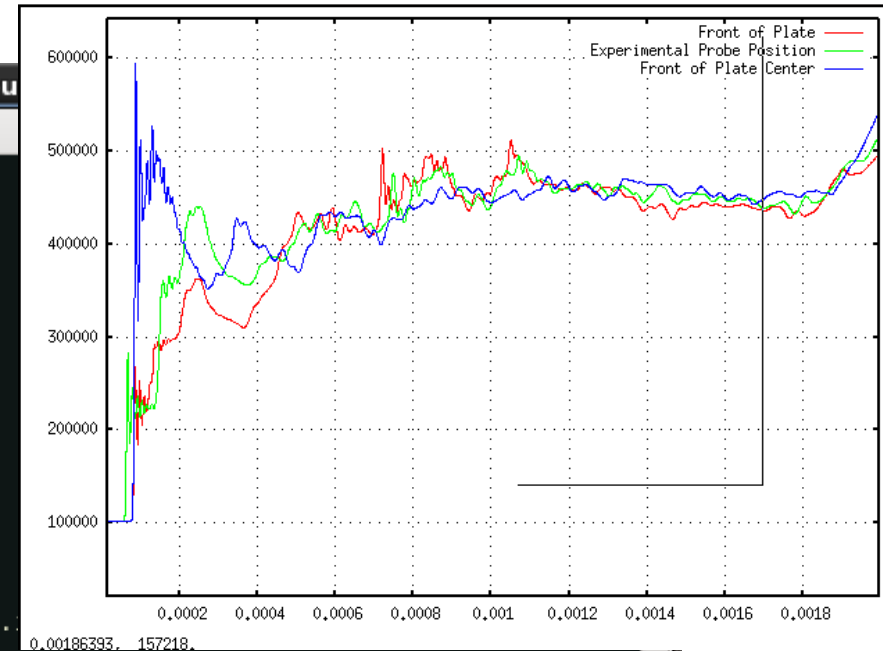
G N U P L O T
Version 4.2 patchlevel 6
last modified Sep 2009
System: Linux 2.6.32-279.5.1.el6.x86_64

Copyright (C) 1986 - 1993, 1998, 2004, 2007 - 2009
Thomas Williams, Colin Kelley and many others

Type 'help' to access the on-line reference manual.
The gnuplot FAQ is available from http://www.gnuplot..

Send bug reports and suggestions to <http://sourceforge.net/projects/gnuplot>

Terminal type set to 'x11'
gnuplot> plot 'shockpanel.prb_0001' using 1:6 t 'Probe 1' w l, 'shockpanel.prb_0002' using 1:6 t 'Pro
be 2' w l, 'shockpanel.prb_0003' using 1:6 t 'Probe 3' w l
gnuplot>
```



0.00186393, 157218.

```
gnuplot> plot 'shockpanel.prb_0001' using 1:6 t 'Probe 1' w l, 'shockpanel.prb_0002'
using 1:6 t 'Probe 2' w l, 'shockpanel.prb_0003' using 1:6 t 'Probe 3' w l
```

