Section 11
Sample I/O

Example System Time Step, I

```
Rocstar: System Time Step :  6
Rocstar: CurrentTime, CurrentTimeStep, ZoomFactor:  0.50000000000000024E-04
   0.10000000000000008E-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.mdot to FluidBufNG.mdot
RFLO:  time          delta-t      force-x      force-y      force-z      mass-in
       mass-out
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 0.60000000000000015E-04
ROCCOM: CALL(0) FullyCoupled.get_timestep
ROCCOM: DONE(0)
```

Performance Data

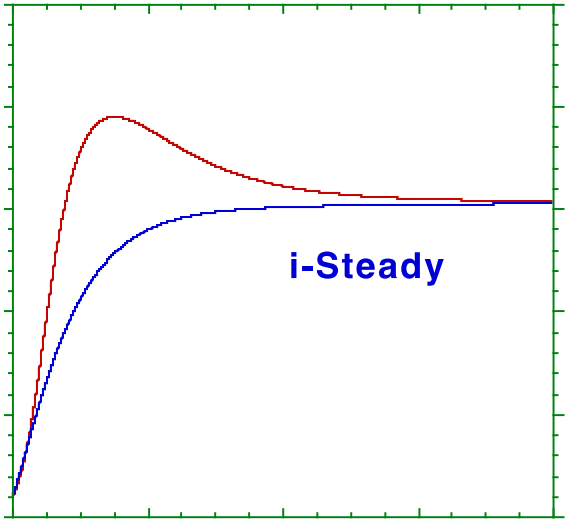
RocstarProfile0000.txt

********** 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

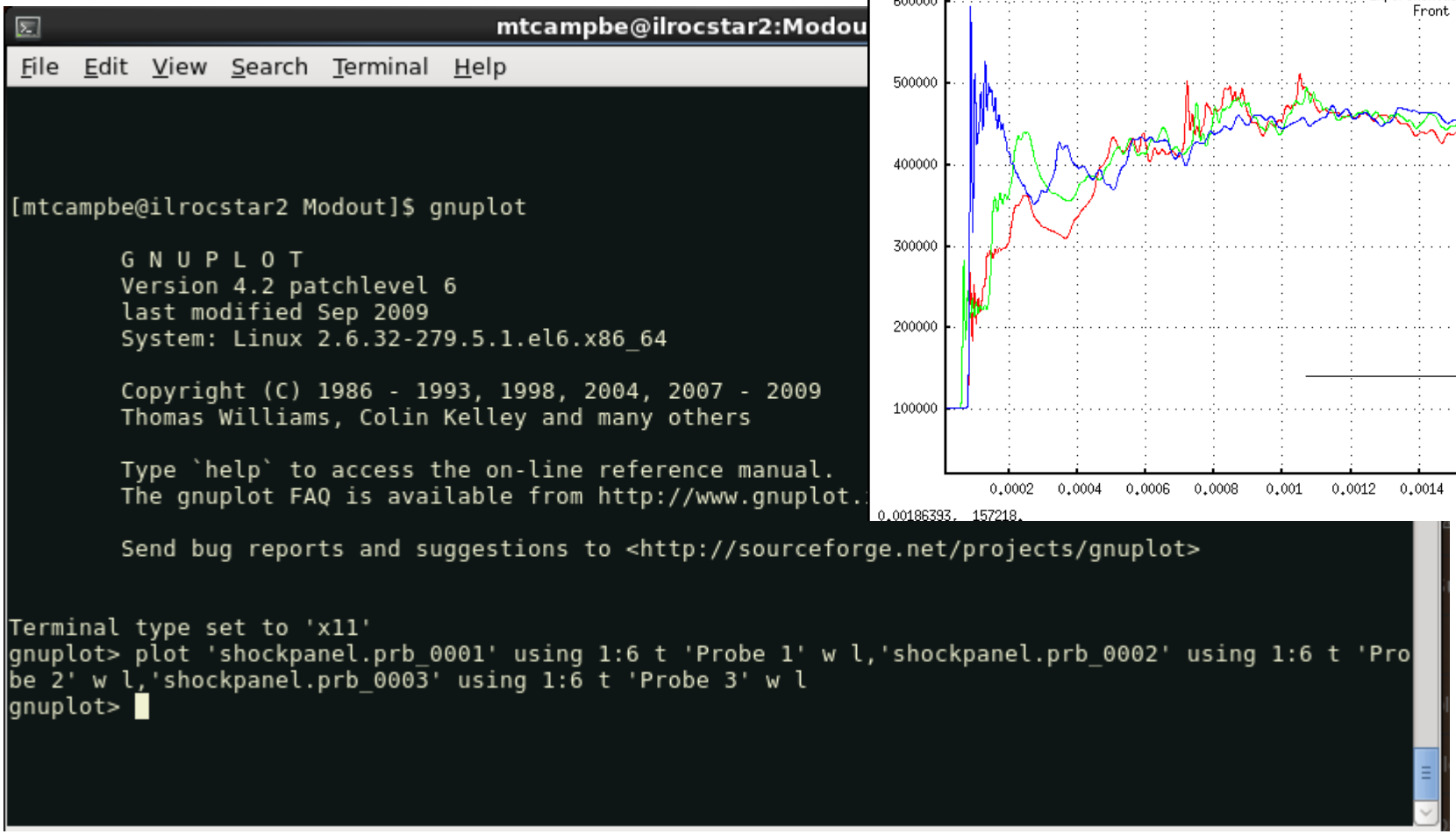
Physics Module Output Data

- 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 → y.yyyyy * 10^(xx-10)`
  - Examples:
    - `fluid_07.800000_0000.hdf` volume
    - `ifluid_b_07.800000_0000.hdf` burning surface
    - `ifluid_nb_07.800000_0000.hdf` non-burning
    - `ifluid_ni 07.800000_0000.hdf` non-interacting
  - Similar solid, isolid and burn, iburn files

Using gnuplot With Probe Files



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