**CS595, 2018. Homework 7**

1) Build PETSc in optimized mode (configure with ‘--with-debugging=0 PETSC\_ARCH=arch-cs595-o’)

2) Run $PETSC\_DIR/src/snes/examples/tutorials/ex14.c (Do not copy/past the command below!):

mpiexec –n 4 ./ex14 -da\_refine 4 -ksp\_converged\_reason -snes\_converged\_reason –pc\_type <pctype> -log\_view

Machine: fourier.cs.iit.edu, 12 cpu cores

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Options | Solver  -snes\_view | Total num. of  nonlinear  iterations | Total no. of  linear  iterations | Total Time (sec)  (-log\_view) |
| 1 | -pc\_type none | Newtonls/gmres/none | 3 | 728 | 5.304 |
| 2 | -pc\_type bjacobi | Newtonls/gmres/bt/bjacobi | 3 | 148 | 1.816 |
| 3 | -pc\_type mg | Newtonls/bt/gmres/mg | 3 | 9 | 2.156 |