Soildynamics Tutorials

Parallel 2D with 4 MPI processes

Single dirichlet condition

```
./PSD_PreProcess -dimension 2 -problem soildynamics  -dirichletconditions 1 -
timediscretization newmark-beta
```

```
PSD_Solve  -np 4 Main.edp  -mesh ./../Meshes/2D/soil.msh -v 0
```

Parallel 3D with 3 MPI processes

Single dirichlet condition and newmark-beta time discretization

```
./PSD_PreProcess -dimension 3 -problem soildynamics  -dirichletconditions 1 -
timediscretization newmark-beta
```

```
PSD_Solve  -np 3 Main.edp  -mesh ./../Meshes/3D/soil.msh -v 0
```

Parallel 2D with double couple with 2 MPI processes

Single dirichlet via double couple and using GFP. Double couple is displacement based.

```
PSD_PreProcess -dimension 2 -problem soildynamics  -model linear  -
timediscretization newmark-beta -useGFP -doublecouple displacement-based
```

```
PSD_Solve  -np 2 Main.edp -v 1 -ns -nw -mesh ./../Meshes/2D/soil-dc.msh
```

try replacing `-doublecouple displacement-based` *with* `-doublecouple force-based` *for double couple constructed by force based method*

Parallel 3D with double couple with 4 MPI processes

Single dirichlet via double couple and using GFP. Double couple is displacement based.

```
PSD_PreProcess -dimension 3 -problem soildynamics  -model linear  -
timediscretization newmark-beta -useGFP -doublecouple displacement-based
```

```
PSD_Solve  -np 4 Main.edp -v 1 -ns -nw -mesh ./../Meshes/2D/soil-dc.msh
```

try replacing `-doublecouple displacement-based` *with* `-doublecouple force-based` *for double couple constructed by force based method*

Parallel 3D with top-ii-vol meshing with 4 MPI processes

Single dirichlet at the bottom and using GFP.

```
PSD_PreProcess -dimension 3 -problem soildynamics  -model linear  -
timediscretization newmark-beta -useGFP  -top2vol-meshing
```

```
PSD_Solve  -np 4 Main.edp -v 0 -ns -nw
```

Parallel 3D with top-ii-vol meshing with 3 MPI processes

Single dirichlet via double couple and using GFP. Double couple is displacement based.

```
PSD_PreProcess -dimension 3 -problem soildynamics  -model linear  -
timediscretization newmark-beta -useGFP  -top2vol-meshing -doublecouple
displacement-based
```

```
PSD_Solve  -np 3 Main.edp -v 0 -ns -nw
```

try replacing `-doublecouple displacement-based` *with* `-doublecouple force-based` *for double couple constructed by force based method*

- *Optionally try using* `-fastmethod` *flag with* `PSD_PreProcess` *optimized solver*
- *Add* `-sequential` *flag to* `PSD_PreProcess` *for sequential solver, but remember to use* `PSD_Solve_Seq` *instead of* `PSD_Solve`