

advection-diffusion与swarmadvector同时存在，该如何求解

一种：/docs/examples/1_12_Internally_Heated_Convection-Copy1

两种方式的dt的最小值，

只对advdiff更新。

第二种：

while step < nsteps:

```
    nonLinearSolver(step, nl_tol=1e-2, nl_maxIts=40)
```

```
    if step % 1 == 0:
```

```
        checkpoint_number +=1
```

```
        checkpoint_function(checkpoint_number, sca.Dimensionalize(time,
u. years). magnitude)
```

```
        # obtain a timestep and apply a courant factor
```

```
        dt = get_dt()
```

```
    if uw.rank()==0:
```

```
        print('step = {0:6d}; time = {1:.3e}'.format(step,
sca.Dimensionalize(time, u. megayears)))
```

```
    uw.barrier()
```

```
    # update plastic strain
```

```
    plasticStrainIncrement = dt * isYielding.evaluate(swarm)
```

```
    weight = boundary(swarm.particleCoordinates.data[:,0], minX, maxX, 20, 4)
```

```
    plasticStrainIncrement[:,0] *= weight
```

```
    cumulativeTotalStrain.data[:] += plasticStrainIncrement
```

```
    # Solve for temperature
```

```
    advdiffSystem.integrate(dt)
```

```
    # integrate swarms in time
```

```
    advector.integrate(dt, update_owners=True)
```

```
    advectorSurface.integrate(dt, update_owners=True)
```