There are 8 videos in this directory. The number in front of the description corresponds to the name of the video. Each animation was made with PSM.

1. a. Newton 50 Body Problem – 50 equal mass bodies randomly distributed on sphere surface,

 angular momentum conserved to 15 digits

 b. Newton 50 Body Problem – 50 equal mass bodies randomly distributed on sphere, center

 of sphere has a body with mass 10 times of other bodies, angular momentum conserved to

 15 digits

$$u\_{t}+cu\_{x}=0$$

 2. Advection Diffusion – advection constant (c=1), diffusion changes (left none, right 0.33), backward difference advection derivative

3. Advection Diffusion – advection changes (cL=1, cR=5), diffusion changes (left none, right 0.33), backward difference advection derivative

4. Advection Diffusion – advection constant (c=1), diffusion changes (left none, right 0.33), centered difference advection derivative

5. Advection Diffusion – advection changes (cL=1, cR=5), diffusion changes (left none, right 0.33), centered difference advection derivative

$$u\_{tt}-c^{2}u\_{xx}=0$$

6. 1d Wave Propagation - speed change (cL=1,cR=2)

$$u\_{tt}-c^{2}\left(u\_{xx}+u\_{yy}\right)=0$$

7. 2d Wave Propagation - speed change (vertical interface (cL=1,cR=2)