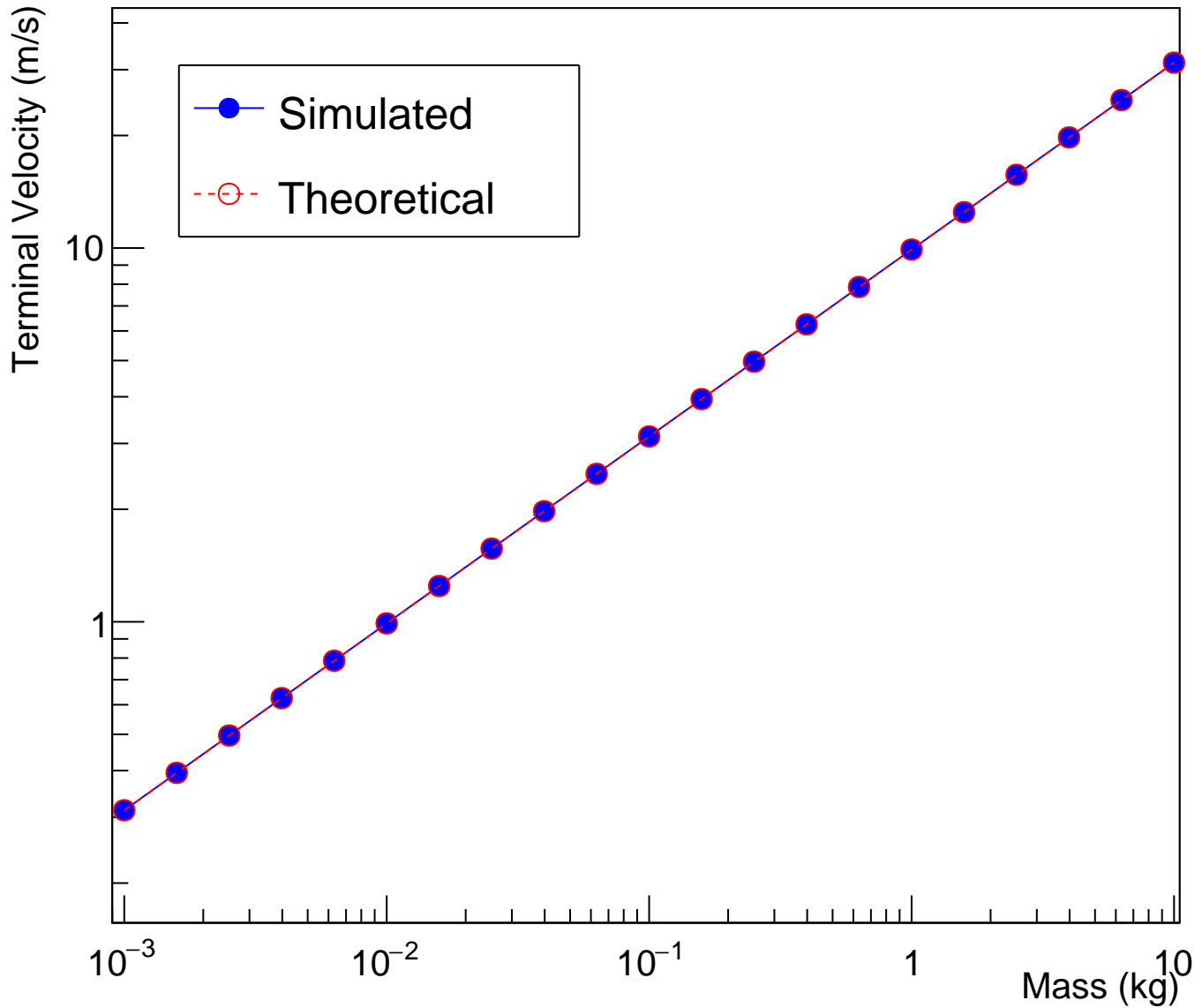Terminal Velocity vs Mass

2) Energy of motion problem at various step sizes.

```
Energy Conservation Test (No Air Resistance)
nsteps=50, dt=0.4s, dE/E0=0
nsteps=100, dt=0.2s, dE/E0=1.45519e-16
nsteps=200, dt=0.1s, dE/E0=0
nsteps=500, dt=0.04s, dE/E0=0
nsteps=1000, dt=0.02s, dE/E0=2.91038e-16
nsteps=2000, dt=0.01s, dE/E0=1.01863e-15
```

3) Terminal velocity

```
Terminal Velocity Determination
Mass: 10 kg
Drag coefficient: 0.1 kg/m
Terminal velocity: 31.3181 m/s
Theoretical vt: 31.3209 m/s
Difference: 0.00887585%
```

5) Accuracy of solution

```
Terminal Velocity vs Mass Study
m=0.001 kg, vt=0.313209 m/s (theory: 0.313209 m/s, error7.08934e-14%)
m=0.00158489 kg, vt=0.394307 m/s (theory: 0.394307 m/s, error8.44689e-14%)
m=0.00251189 kg, vt=0.496403 m/s (theory: 0.496403 m/s, error8.94614e-14%)
m=0.00398107 kg, vt=0.624935 m/s (theory: 0.624935 m/s, error1.59889e-13%)
m=0.00630957 kg, vt=0.786746 m/s (theory: 0.786746 m/s, error1.55227e-13%)
m=0.01 kg, vt=0.990454 m/s (theory: 0.990454 m/s, error1.68138e-13%)
m=0.0158489 kg, vt=1.24691 m/s (theory: 1.24691 m/s, error4.30944e-12%)
m=0.0251189 kg, vt=1.56976 m/s (theory: 1.56976 m/s, error2.78483e-09%)
m=0.0398107 kg, vt=1.97622 m/s (theory: 1.97622 m/s, error4.7602e-07%)
m=0.0630957 kg, vt=2.48791 m/s (theory: 2.48791 m/s, error1.06245e-08%)
m=0.1 kg, vt=3.13209 m/s (theory: 3.13209 m/s, error1.37889e-06%)
m=0.158489 kg, vt=3.94307 m/s (theory: 3.94307 m/s, error6.57838e-05%)
m=0.251189 kg, vt=4.96403 m/s (theory: 4.96403 m/s, error2.72239e-05%)
m=0.398107 kg, vt=6.24934 m/s (theory: 6.24935 m/s, error3.04529e-05%)
m=0.630957 kg, vt=7.8674 m/s (theory: 7.86746 m/s, error0.000768731%)
m=1 kg, vt=9.90441 m/s (theory: 9.90454 m/s, error0.00137797%)
m=1.58489 kg, vt=12.469 m/s (theory: 12.4691 m/s, error0.000682587%)
m=2.51189 kg, vt=15.6972 m/s (theory: 15.6976 m/s, error0.00260449%)
m=3.98107 kg, vt=19.7614 m/s (theory: 19.7622 m/s, error0.00361534%)
m=6.30957 kg, vt=24.8773 m/s (theory: 24.8791 m/s, error0.00705725%)
m=10 kg, vt=31.3181 m/s (theory: 31.3209 m/s, error0.00887585%)
```