PHYS 240 homework #9 – due Feb 26 2013, 5:25pm, upload to Canvas

Lorenz model and ODE efficiency

1. Write a nonadaptive version of the `lorenz` program that uses `rk4`. Run the nonadaptive version using the minimum time step used by the adaptive version. Remember that `rka` is effectively using a time step of $\Delta t/2$, since this is the step size for the small steps. Determine the relative efficiency of the two methods by measuring their real-world execution times for the same total model-time interval (say up to $t \sim 10$). You'll need to investigate what Python commands could be used for this.

2. Include any discussion in a report generated in LaTeX. Also submit your Python code separately.