Python H.w.3

(Due day: 11/02)

The Foucault pendulum is a simple device named after French physicist Léon Foucault and conceived as an experiment to demonstrate the Earth's rotation and the Coriolis effect. Now assume a Foucault pendulum with length L = 10 m and is placed in Taiwan (i.e., the latitude is about 24° N).

(a) Please simulate the swing trace of the pendulum that is projected upon the x-y plane (i.e., the horizontal plane). Assume the swing angle is relatively small and hence you could approximate the pendulum as a simple harmonic motion. Note that you could ignore the air drag, centrifugal acceleration, etc.

(b) Calculate how long does it take for the swing plane of the pendulum to rotate a full circle 360°?

(c) Following the above questions, how long does it take for the swing plane to rotate a full circle if the length of the pendulum is shortened to L = 1 m?