

41.2: The Spherical Pendulum

A spherical pendulum is similar to a simple plane pendulum, except that the pendulum is not constrained to move in a plane; the mass m is free to move in two dimensions along the surface of a sphere. Figure 41.2.1 shows a photograph of the movement of a spherical pendulum.

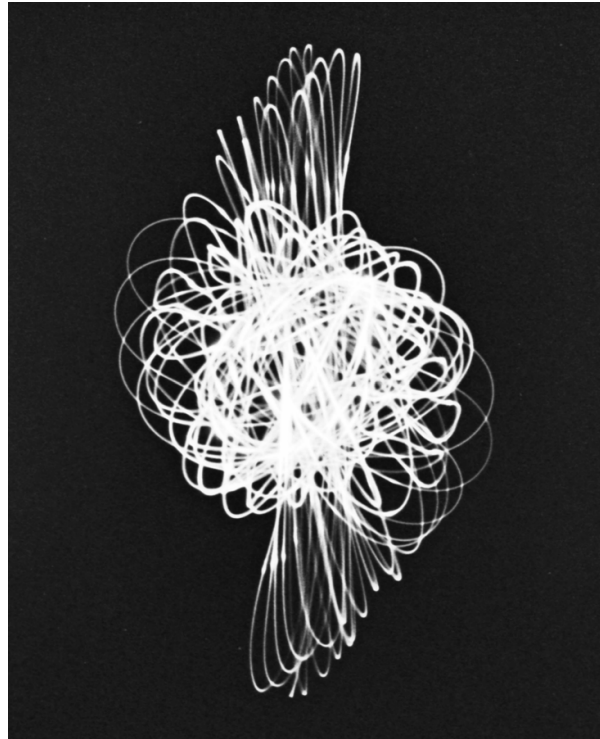


Figure 41.2.1: Trace of the motion of a spherical pendulum, made by the author. A flashlight lens was covered with a piece of cardboard in which a small hole was punched. The flashlight was then suspended by a string from the ceiling (lens downward) to create a pendulum. The room was then darkened, the flashlight turned on, and the flashlight pendulum allowed to swing back and forth for several minutes above a camera which was on the floor pointing up toward the ceiling. The camera shutter was kept open, allowing this time-exposure image to be made on the film. (Image Copyright (C 2011 D.G. Simpson.)

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