

The MathStudio Pendulum Project

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Abstract

MathStudio at Smith College is an ongoing creative studio space focusing on process and dialogue about art and math. We present a large real pendulum moving freely and dripping juices onto snow and ink onto sheets of paper.



MathStudio at Smith College is an ongoing creative studio space focusing on process and dialogue about art and math. In mathematics courses, the Newtonian pendulum equation $\ddot{x} = -\sin x$ is a classic example of a differential equation and it is used as an endless source of mathematical and computer explorations. In the year 2009-2010 I introduced a real pendulum into an undergraduate senior Seminar class within MathStudio. I introduced the students to “Botafumeiro” videos from the Catedral de Santiago de Compostela in Spain and to the hanging rope work of the seminal artist Simone Forti from the 1960s. We hung a swinging pendulum that dripped paint onto sheets of paper while moving freely. Figures 1, 2, and 3 show several results.



Figure 1: Coffee and beet juice on snow. (Overall diameter about 25 feet.) Site-specific drawing with Aki Sasamoto and Sam Ekwurtzel, MathStudio, 2011.

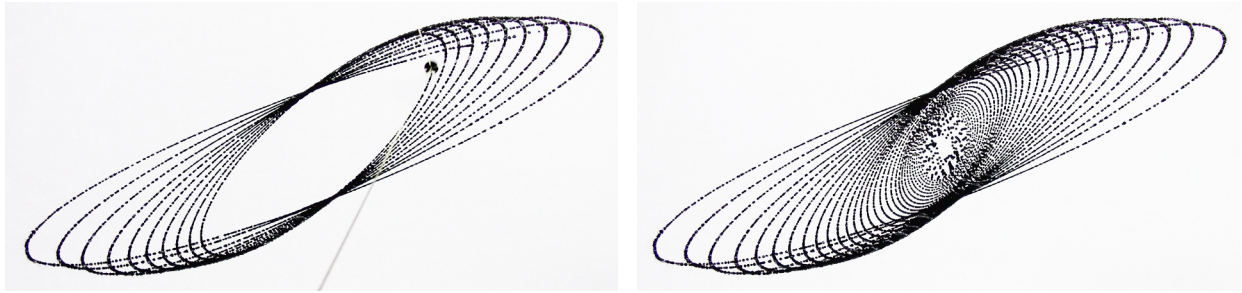


Figure 2: *Initial and final stages of an elongated example.*

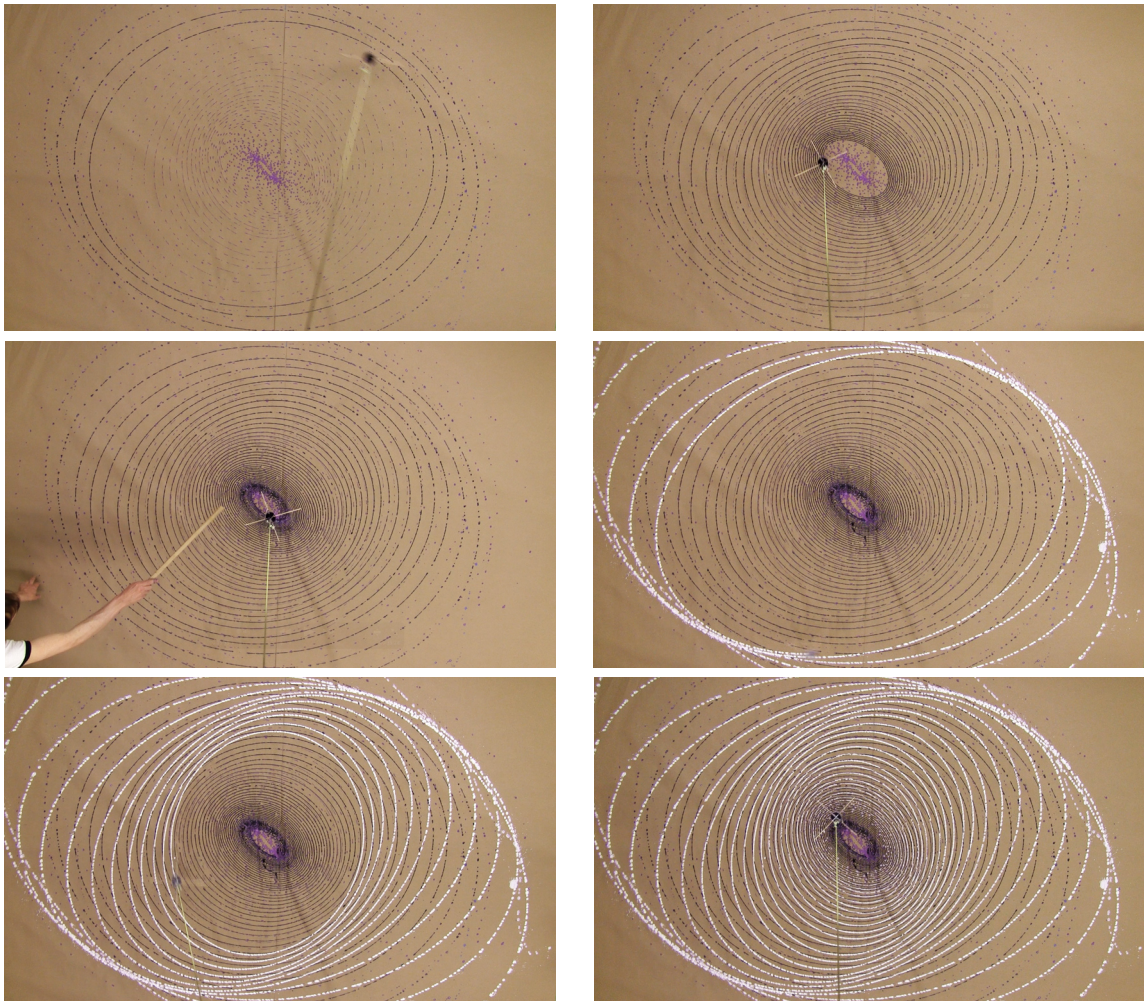


Figure 3: *An example with several layers. The almost-elliptic curves adopt several configurations through time as the pendulum moves. Notice the scale with the human arm in the middle-left figure.*