1046-37-1821 **L. Loizou***, James Madison University, Dept. of Math and Stats, Harrisonburg, VA 22807, and **M. Dankwa**, **J. Herburt-Hewell** and **J. C. Ortega**. *A chaotic day at the beach.* Preliminary report.

The chaotic waterwheel, a physical model of the Lorenz system, is a well studied and fairly well understood problem in dynamical systems. Last summer, NREUP participants at James Madison University designed, developed and constucted a sandwheel, in which sand replaced water. Linear stability analysis was used to explore dynamics of the system. Numerical experiments indicated that the center of mass could be used to classify the system's behavior; including constant, rolling, periodic and chaotic states. Ongoing research compares physical observations to the mathematical observations and finding consistency between the two. This talk outlines our work on the 'not-so-chaotic' sandwheel. (Received September 16, 2008)