

Abstract Submitted  
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**Observation of the Topological Change Associated with the Dynamical Monodromy** DANIEL SALMON, MATTHEW NEREM, SETH AUBIN, JOHN DELOS, William & Mary Coll — Classical mechanics is an old theory and new phenomena do not often appear. A recently predicted phenomenon is called “Dynamical Monodromy. Monodromy is the study of the behavior of a system as it evolves “once around a closed circuit. Systems that do not return to their original state after forming a closed circuit in some space are said to exhibit “nontrivial monodromy. One such system is a collection of non-interacting particles moving in a “champagne bottle potential. A loop of trajectories of this system exhibits a topological change when each of the particles traverse a monodromy circuit in Energy-Angular Momentum space (any closed path that encloses the singular point at the origin). This system has been realized using a rigid spherical pendulum, with a permanent magnet at its end. Magnetic fields generated by coils are used to create the champagne-bottle potential, as well as drive the pendulum through the monodromy circuit.

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