

Abstract Submitted  
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**Foucault's Pendulum, Analog for an Electron Spin State** REBECCA LINCK, San Jose State University — The classical Lagrangian that describes the coupled oscillations of Foucault's pendulum presents an interesting analog to an electron's spin state in an external magnetic field. With a simple modification, this classical Lagrangian yields equations of motion that directly map onto the Schrodinger-Pauli Equation. This analog goes well beyond the geometric phase, reproducing a broad range of behavior from Zeeman-like frequency splitting to precession of the spin state. By demonstrating that unmeasured spin states can be fully described in classical terms, this research opens the door to using the tools of classical physics to examine an inherently quantum phenomenon.

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