

Abstract Submitted
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Quantizing Nonholonomic Systems OSCAR E. FERNANDEZ,
Wellesley College — Recent developments in nanomanufacturing have produced molecular “nanocars” that roll on (usually) gold surfaces. Macroscopically, these nanocars are just cars, which are classic examples of nonholonomic systems—mechanical systems subject to non-integrable velocity constraints. Data on the energy required to set the nanocars in motion exists, but no theory of “quantum nonholonomic mechanics” exists. In this talk I will discuss my recent article developing such a theory for particular classes of nonholonomic systems, and my current work on extending that theory to develop a theoretical model for nanocars’ quantum dynamics.

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