1052-70-229 **Oscar E Fernandez*** (oscarum@umich.edu), 1300 E. Lafayette St., Apt. 308, Detroit, MI 48207, and **Anthony M Bloch**. *Explicitly Solvable Nonholonomic Systems.*

In this talk we discuss various nonholonomic mechanical systems whose solutions are explicitly obtainable. For a certain class, called conditionally variational, we relate the existence of an invariant measure density for the system to the existence of explicit solutions, and further consider when such systems may be mapped into a Hamiltonian system subject to certain initial conditions. We also discuss specific systems which do not possess invariant measures but are nonetheless integrable by quadratures. (Received August 28, 2009)