Abstract Submitted
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Geometric Phase for Polar Molecules in rotating Electric and Magnetic Fields[1] EDMUND MEYER, RUSSELL STUTZ, LAURA SINCLAIR, AARON LEANHARDT, ERIC CORNELL, JOHN BOHN, JILA — Berry's original formulation of the geometric phase [1] considered adiabatic transport of a structureless spin by a magnetic field around a closed circuit, and found an additional phase of geometric origin. We have generalized Berry's notion to structured atoms and molecules, where different constituents contribute differently to the net magnetic and electric dipole moments. In particular, we present numerical simulations describing the geometric phase gained by a paramagnetic, polar molecule in simultaneous magnetic and electric fields. Of particular interest is the behavior of the geometric phase as the fields span the intermediate range between "low" and "high", as compared to the hyperfine structure of the molecule. [1] M. V. Berry, F.R.S., Proc. R. Soc. Lond. A., **382**, 45 (1984).

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