Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Sorting Category: 10.1.8 (T)

Non-Abelian Berry transport, spin coherent states, and Majorana points YUN LIU, ABHISHEK ROY, MICHAEL STONE, University of Illinois at Urbana-Champaign — We consider the adiabatic evolution of Kramers degenerate pairs of spin states in a half-integer spin molecular magnet as the molecule is slowly rotated, for which it is possible to encounter non-Abelian Berry's phase. To understand the full details of the adiabatic quantum evolution, we invoke Majorana's parametrization of a general spin-j state in terms of the $2j$ Majorana points. As an illustration we consider molecular magnets of the $j = 9/2$ Mn4 family and compute the frequency with which the magnetization varies. This frequency is generally different from the frequency of the rotation.

[X] Prefer Oral Session
[ ] Prefer Poster Session

Yun Liu
yunliu1@illinois.edu
University of Illinois at Urbana-Champaign

Date submitted: 21 Feb 2012 Electronic form version 1.4