Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Macroscopic quantum effects in a rotating nanomagnet GWANG-HEE KIM, Sejong University — We study spin tunneling in a rotational magnetic nanoparticle in the presence of sound waves. Equations of motions are derived that couple spin and mechanical degrees of freedom and the perturbative solution of these equations is obtained. We find quantum beats of magnetization which are strongly affected by the moment of inertia of the molecular magnet and its total angular momentum. The optimal condition for generating the quantum beat of magnetization with a large period is discussed.

Gwang-Hee Kim
Sejong University

Date submitted: 29 Oct 2012 Electronic form version 1.4