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Quantum mechanical forces in the presence of spin and rotational states of nanomagnets GWANG-HEE KIM, Sejong Univ — We study nanomagnets that are free to rotate about their anisotropy and display quantum mechanical forces originated from quantum tunneling between classically degenerate magnetic states. Employing superpositions of spin and rotational states, we show that such forces can exist in the presence of a microwave field and a static magnetic field with a gradient. The optimal conditions for the observation of the oscillating force with quantum beats are presented.

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