

Abstract Submitted
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Magnetization of a magnetic quantum structure¹ NAMMEE KIM, DAE-HAN PARK, Soongsil University — The energy dispersion and magnetization of a modified magnetic dot are investigated numerically. The effects of an additional electrostatic potential, magnetic fields non-uniformity, and the Zeeman spin splitting are studied. The modified magnetic quantum dot is a magnetically formed quantum structure which has different magnetic fields inside and outside the dot. The additional electrostatic potential prohibits the ground-state angular momentum transition in the energy dispersion as a function of the magnetic field inside the dot and provides the oscillation of the magnetization as a function of the chemical potential energy. The magnetic fields non-uniformity has smoothen the shape of magnetization. The Zeeman spin splitting produces additional peaks on the magnetization.

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