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The magnetic properties of a small particle on an hexagonal substrate: Monte Carlo and effective field treatments

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Highlights

- Magnetic properties are examined for a small particle on an hexagonal substrate.
- The system is studied by using Monte Carlo Simulation and Effective Field Theory.
- The hysteresis curves are obtained for different temperatures.
- The areas of the loops are decreasing with increasing of the temperatures.
- The system exhibits a first order phase transition.