

Simple explanation for the reentrant magnetic phase transition in $\text{Pr}_{0.5}\text{Sr}_{0.41}\text{Ca}_{0.09}\text{MnO}_3$ perovskite

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Abstract: The reentrant magnetic phase transition in $\text{Pr}_{0.5}\text{Sr}_{0.1}\text{Ca}_{0.09}\text{MnO}_3$ perovskite is explained using the Ising spin model on the square lattice with mixed ferromagnetic and antiferromagnetic exchange interactions. It is shown using numerical calculations that this effect is strongly affected by the external magnetic field and lattice disorder.

Author Keywords: Ising model; Perovskite; Phase transition

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