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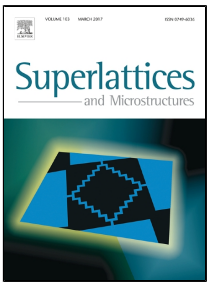

Monte carlo study of a ferrimagnetic mixed-spin (2, 5/2) system with the nearest and next-nearest neighbors exchange couplings

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Highlights:

- A ferrimagnetic mixed-spin (2,5/2) Ising system with next nearest-neighbor exchange couplings has been proposed.
- Effects of exchange couplings and anisotropy on the magnetic properties of the system were investigated by Monte Carlo simulations.
- Various types of magnetization curves depend on physical parameters and temperature.
- The phase diagrams for different next nearest-neighbor exchange couplings and anisotropy have been obtained.