Magnetic Properties of Spin-1/2 Quantum Heisenberg Ferromagnet with Spatially Anisotropy

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Abstract: The spin-1/2 quantum Heisenberg ferromagnet with anisotropic spin exchange interactions in three dimensions are investigated by means of the Green's function method. In the Tyablikov approximation, the correlation functions, the magnetization, and the susceptibilities are computed. The magnetic properties of this model are found to be dependent of anisotropy.

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