GALOIS PROPERTIES OF THE EIGENPROBLEM OF A HEXAGONAL MAGNETIC HEISENBERG RING

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9.7 cm

We analyse the number field theoretic properties of solutions of the eigenproblem of the Heisenberg Hamiltonian for the magnetic hexagon with the single-node spin 1/2 and isotropic exchange interactions. It follows that eigenenergies and eigenstates are expressible within an extension of the prime field **Q** of rationals of degree 2^3 and 2^4, resp. In quantum information setting, each real extension of rank 2 represents an arithmetic qubit. We demonstrate in detail some actions of the Galois group on the eigenproblem.

13.4 cm

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