

SEMINAR ANNOUNCEMENT

國立中山大學物理系113學年度第二學期專題演講

Lieb-Schultz-Mattis Theorem for 1D Quantum Magnets with Antiunitary Translation and Inversion Symmetries

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Abstract:

The Lieb-Schultz-Mattis (LSM) theorem is a fundamental result in condensed matter physics that relates symmetries to the ground state properties of quantum many-body systems. The conventional LSM theorem states that a 1d antiferromagnetic spin chain with spin-rotation and lattice-translation symmetries cannot have a unique gapped ground state if the spin per unit cell is half-integral. In this talk, I will present extensions of the LSM theorem for 1d quantum magnets with certain combinations of spin-rotation, spatial, and time-reversal symmetries. The results can be applied to a wider range of systems with spin interactions beyond the Heisenberg exchange interaction, such as Dzyaloshinskii-Moriya and chiral three-spin interactions.

VENUE

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TIME

**Mar. 13, Thu.
14:10**