

Abstract Submitted
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Hidden Magnetic Order in Quantum Spin Chains¹ CHANGFENG CHEN, University of Nevada, Las Vegas — We report on a study of the hidden magnetic order and the associated topological structure in antiferromagnetic Heisenberg chains with general spins. We show that rich topological structures with intriguing physical properties manifest on the macroscopic length scale but disappear on the infinite length scale in chains with half-integer spins. It demonstrates that the macroscopic length scale is not a very large length scale in this problem and must be treated separately from the infinite length scale that is often taken as a substitute for the macroscopic thermodynamic limit. We reveal a concept of multiple length scales in describing the topological structures in quantum spin chains.

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