Xxz Chain Correlation Functions Pdf

Since then, the method has been extended to other spin chains, statistical lattice models and generalized hydrodynamics. de5b1798be Particularly, Chern–Simons theory is specified by a choice of simple Lie group G known as the gauge group of the theory and also a number referred to as the level of the theory, which is a constant that multiplies the action. The action is gauge dependent, however the partition function of the quantum theory is well-defined when the level is an integer and the gauge field strength vanishes on all boundaries of the 3-dimensional spacetime. de5b1798be

Localization-protected quantum order Such systems never reach local thermal equilibrium, and retain local memory of their initial conditions for infinite times. notion of eigenstate order: one can measure order parameters and correlation functions in individual energy eigenstates of a many-body system, instead Many-body localization (MBL) is a dynamical phenomenon which leads to the breakdown of equilibrium statistical mechanics in isolated many-body systems. One can still define a notion of phase structure in these out-of-equilibrium systems. Strikingly, MBL can even enable new kinds of exotic orders that are disallowed in thermal equilibrium – a phenomenon that goes by the name of localization-protected quantum order (LPQO) or eigenstate order de5b1798be

The study of phases of matter and the transitions between them has been a central enterprise in physics for well over a century. One of the earliest paradigms for elucidating phase structure, associated most with Landau, classifies phases according to the spontaneous breaking of global symmetries present in a physical system. More recently, we have also made great strides in understanding topological phases of matter which lie outside Landau's framework: the order in topological phases cannot be characterized by local patterns of symmetry breaking, and is instead encoded in global patterns of quantum entanglement... de5b1798be

Chern–Simons theory In the Chern–Simons theory, the action is proportional to the integral of the Chern–Simons 3-form. It was discovered first by mathematical physicist Albert Schwarz. It is named after mathematicians Shiing-Shen Chern and James Harris Simons, who introduced the Chern–Simons 3-form. including exactly solvable lattice models (like the six-vertex model or the XXZ spin chain), integrable quantum field theories (such as the Gross–Neveu model, The Chern–Simons theory is a 3-

dimensional topological quantum field theory of Schwarz type de5b1798be

== Background == de5b1798be It is also the central mathematical object in theoretical models for topological quantum computers (TQC). Specifically... de5b1798be == Discussion == de5b1798be "Bethe ansatz problems" were one of the topics featuring in the "To learn" section of Richard Feynman's blackboard at the time of his death. de5b1798be The approach was later generalized into the quantum inverse scattering method (QISM) and the algebraic Bethe ansatz, forming the basis of modern integrable system theory. de5b1798be

Bethe ansatz the Bethe ansatz Anderson impurity model Gaudin model XXX and XXZ Heisenberg spin chain for arbitrary spin s {\displaystyle s} Hubbard model Kondo model In physics, the Bethe ansatz is used to calculate the exact wave functions of certain quantum-mechanical many-body systems, most commonly in one spatial dimension. This ansatz was introduced by Hans Bethe in 1931 to obtain the exact eigenvalues and eigenvectors of the one-dimensional antiferromagnetic isotropic (XXX) Heisenberg model de5b1798be

In condensed-matter physics, Chern–Simons theory describes composite fermions and the topological order in fractional quantum Hall effect states. In mathematics, it has been used to calculate knot invariants and three-manifold invariants such as the Jones polynomial. de5b1798be In the framework of many-body quantum mechanics, models solvable by the Bethe ansatz can be contrasted with free fermion models. The dynamics of a free model is one-body reducible: its many-body wave function for fermions (bosons) is the antisymmetrized (symmetrized) product of one-body wave functions. Models solvable by the Bethe ansatz are interacting systems: their two-body sector has a nontrivial scattering... de5b1798be