

Quantum simulators of many-body phenomena with integrability

【摘要】

For a long time exactly solvable models were considered to be mathematical toy models. However, this impression was changed over the past two decades due to advanced quantum engineering of genuine many-body systems using ultracold atoms. In particular, some prototypical exactly solvable Yang–Baxter systems have been successfully realized allowing us to confront elegant and sophisticated exact solutions of these systems with their experimental counterparts. Such new experimental systems provide novel and useable quantum simulators of unique many-body phenomena with integrability.

In this talk, I will briefly introduce new frontiers in quantum integrability, and then show a quantum simulator of Yang-Gaudin model, which remarkably provides a determinant observation of the Luttinger theory of spin-charge separation in the trapped 1D ultracold Fermi gas. (Science, 376, 1305 (2022); Rep. Prog. Phys 85, 114001 (2022)).

【报告人简介】



管习文1998年吉林大学博士毕业后到2002年期间在德国和巴西从事博士后研究。2003-2012期间在澳大利亚国立大学（ANU）物理与工程研究院任研究员、高级研究员，2012年10任中科院精密测量科学与技术研究院（前武汉物理与数学研究所）研究员，自2016任ANU的荣誉教授。管习文长期从事冷原子少体和多体物理系统和自旋系统的严格解研究，取得了一系列在国际上颇具影响力的研究成果。

【报告人】

管习文

中国科学院
精密测量科学与
技术创新研究院

【时间】

2023/ 4/ 26 (周三)
下午 4:00

【地点】

清华大学高等研究院
科学馆104报告厅

