北京大学量子材料科学中心

International Center for Quantum Materials, PKU

Weekly Seminar

Fractional Spin Excitations in Correlated Electron Systems: A Spectral Perspective

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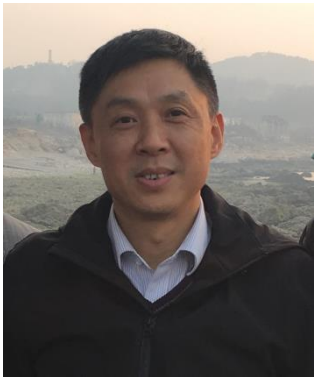

时间: 2021年1月6日 （周三）下午4:00

腾讯会议链接：https://meeting.tencent.com/s/X5kuP0qSRgWo

腾讯会议ID：504 153 227

Abstract

The elementary excitations from the conventional magnetic ordered states, such as ferromagnets and antiferromagnets, are magnons carrying spin-1. In a quantum spin liquid, the spin-1 excitations are fractionalized into two deconfined spinons with spin-1/2, which is considered to be a key feature of spin liquids.

In this talk, I will present our theoretical investigations on the fractionalized spin excitations in the edge ferromagnetic state of graphene signifying the ferromagnetic Luttinger liquid ground state, the possible emergency of partially deconfined spinons in the square-lattice J1-J2 Heisenberg mode and its evolution with J2, and the coexistence of fractional spin excitations and magnons in the Kitaev-(off-diagonal) model which is suggested to be the minimum spin model for -RuCl3 by us.

About the speaker

李建新，南京大学物理学院教授。1993年于武汉大学获博士学位。1993年起于南京大学历任博士后、副教授、教授。先后在台湾中研院物理研究所、美国加州大学伯克利分校从事一年的访问研究。2005年获国家杰出青年科学基金。2009-2011年曾受聘为教育部长江学者特聘教授。主要从事强关联电子系统、低维量子自旋系统以及非常规超导物理的理论研究。