JITCP Seminar

THE UNIVERSITY OF HONG KONG
HKU-UCAS JOINT INSTITUTE OF THEORETICAL AND COMPUTATIONAL PHYSICS
HK INSTITUTE OF QUANTUM SCIENCE & TECHONOLOGY
[Thursday Morning, 11:00 am, Zoom]

The modern revival of electron spin resonance in quantum magnets

Prof. Oleg STARYKH
University of Utah

Electron spin resonance (ESR) represents one of the oldest, and one of the most precise, measurements of spin dynamics. In my talk I describe key reasons that make ESR a particularly informative probe of spin dynamics in quantum spin liquids.

I focus on two specific examples and describe the ESR response of a two-dimensional spin liquid with spinon Fermi surface as well as that of a frustrated spin-1/2 Heisenberg chain. I also present experimental verification of our theoretical predictions by the electron spin resonance (ESR) experiments on a model material $K_2CuSO_4Br_2$. Here we exploit the unique feature of the material, "the uniform DM interaction between chain's spins", in order to access the small momentum regime of the dynamic spin susceptibility. By measuring interaction-induced splitting between the two components of the ESR doublet we directly determine the magnitude of the marginally irrelevant backscattering interaction between spinons for the first time ever.

Online Zoom Seminar
Thursday, May 18, 2023, 11:00 am
https://hku.zoom.us/j/91942341854?pwd=aEt6TXcwakZ0L0cxV1U1SjBvRVhDdz09
Meeting ID: 919 4234 1854, Password: 25600

Host: Professor Gang CHEN, The University of Hong Kong

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Phone: 28592360, Fax: 25599152. Anyone interested is welcome to attend.