

INDIAN ASSOCIATION FOR THE CULTIVATION OF SCIENCE

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Seminar Notice

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Theoretical Physics Department

Title:	Majorana-Vison zero-energy resonance in Kitaev's spin liquid
Speaker:	Masafumi Udagawa, Department of Physics, Gakushuin University, Japan
Date:	January 25, 2018 (Thursday)
Time:	3:30 p.m.
Venue:	Theoretical Physics Seminar Room (C406), 3rd Floor, Centenary Building, IACS
Abstract:	Quantum spin liquid (QSL) is a class of nontrivial non-magnetic insulators, which are "not" smoothly connected to an assembly of isolated atoms. Regarding QSL, many interesting properties have been predicted, including the existence of fractionalized excitations and a possibility that it serves as a place to realize high-temperature superconductivity upon carrier doping. While experimental realization of QSL has not been available so far, Kitaev's proposal of theoretical model is rapidly turning this situation. Kitaev's model provides a precious example of exactly solvable model with QSL ground state. Moreover, following Jackeli's proposal, several compounds have been raised as promising candidates of its realization. In this talk, I will address the local and global magnetic response of Kitaev's spin liquid. The magnetic response functions bridge the theoretical prediction and experimental data, and enable us to diagnose the QSL state. In particular, we will focus on the effect of site dilution, and address the appearance of characteristic zero-energy resonance, which highlights the nature of fractionalization of this system.

All are cordially invited to attend the seminar