613th ASRC Seminar

Date : 15:30- Thursday, February 4

Location : Meeting room 302, ASRC Building

Speaker : Dr. Jun-ichiro Kishine
(The Open University of Japan)

Title : Chiral helimagnet through the polarized probes

Abstract: In a magnetic crystal belonging to a mono-axial (tetragonal, hexagonal, or trigonal) chiral space group, competition of the Dzyaloshinskii-Moriya interaction and ferromagnetic exchange interaction causes a helical magnetic arrangement with definite vector chirality. The most intriguing property of chiral helimagnet is that there appears a nonlinear regular lattice of spin magnetic moments under weak magnetic field applied perpendicular to the helical axis. This state, called chiral soliton lattice (CSL), is an extremely robust topological ground state, where magnetic topological charges condense into regular lattice. In this presentation I present physical properties of the CSL from theoretical viewpoints. In particular, I will stress that chiral degrees of freedom couple with any polarized probe such as muon, neutron, X-ray, and ultrasound. I will review how these probes detect chiral magnetic structures and novel dynamics associated with them, with special emphasis on neutron scattering experiments.

＜Contact＞
Michiyasu Mori (81-3508)
Advanced Science Research Center