



Contribution ID: 84

Type: Talk

【712】 Dipolar-octupolar correlations in $\text{Ce}_2\text{Hf}_2\text{O}_7$ quantum spin ice candidate

Tuesday 10 September 2024 17:00 (15 minutes)

Pyrochlore oxides incorporating magnetic Ce^{3+} have been the subject of intense experimental and theoretical efforts over the past few years. Their rich physics is related to their dipole-octupole magnetic degrees of freedom and possibility to stabilise a quantum spin ice (QSI) ground state – the prototype three-dimensional quantum spin liquid. While all studied materials show continua of excitations attributed to the fractionalized spinon excitations of QSI, the nature of the underlying correlations has been subject to debates. Here we show using neutron scattering that $\text{Ce}_2\text{Hf}_2\text{O}_7$ develops hybrid dipolar-octupolar correlations. The large contrast between dipolar and octupolar form factors allows to determine the weak dipolar-octupolar exchange of the Hamiltonian.

Author: SIBILLE, Romain Franck

Co-authors: Prof. NEVIDOMSKYY, Andriy (Rice); Prof. BHARDWAJ, Anish (ST. BONAVENTURE); Dr LHOTEL, Elsa (CNRS); Prof. YAN, Han (The University of Tokyo); Prof. CHANGLINI, Hitesh (Florida State University); Dr PETIT, Sylvain (CEA); POREE, Victor Alexis

Presenter: POREE, Victor Alexis

Session Classification: Neutron Science

Track Classification: Neutron Science