



Contribution ID: 69

Type: Invited Talk

Slow dynamics in magnetic pyrochlore oxide systems

Monday, 14 September 2015 15:55 (40 minutes)

Geometrically frustrated magnetic systems provide a large variety of unusual magnetic ground states. Among these, the pyrochlore oxide compounds (formula $A_2B_2O_7$, where A is a magnetic rare-earth, and B a transition metal) have focused much attention, because their lattice, made of corner-sharing tetrahedra, is a source of strong magnetic frustration. It results in the stabilization of exotic magnetic ground states, such as classical or quantum spin-ices, spin-liquids or unconventional magnetic orders combined with spin fluctuations.

I will present a review of magnetization and ac susceptibility studies on these compounds which evidence the existence of slow dynamics at very low temperature. These dynamics coexist with fast fluctuations and / or magnetic ordering. They can be the signature of emergent excitations, such as magnetic monopoles in classical spin-ices ($A=Ho, Dy$) but in other systems ($A=Tb, Er, Nd \dots$), their origin remains an open issue. They could be due to loop dynamics, domain-wall dynamics, as well as induced by the presence of structural defects.

Primary author: Dr LHOTEL, Elsa (Institut Néel CNRS)

Presenter: Dr LHOTEL, Elsa (Institut Néel CNRS)

Session Classification: Electrons and spins

Track Classification: DyProSo2015 Main track