Quantum Kagome Spin Liquids

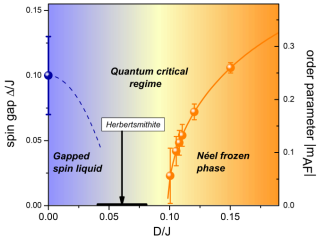
Philippe Mendels[1,2]

[1] *Laboratoire de Physique des Solides, Université Paris Sud 11, UMR CNRS 8502, F-91405 Orsay, France*

[2] *Institut Universitaire de France, 103 Boulevard Saint-Michel, F-75005 Paris, France*

The discovery of Herbertsmithite, $ZnCu_3(OH)_6Cl_2$, which features a perfect kagome geometry and has been revealed to be a leading 2D-candidate for having a quantum spin liquid ground state has triggered an intense activity on new kagome materials and related theories for the ground state of the quantum kagome Heisenberg antiferromagnet.

After introducing the basic ideas and theoretical issues, I'll illustrate some of our research thrusts in tracking down quantum spin liquid physics in Cu2+ S=1/2 materials and will discuss the experimental phase diagram which result from deviations from the pure Heisenberg case.



D = strength of D.M. anisotropy

If time permits, I'll present a new route to this physics with a novel Vanadium-based oxyfluoride kagome family.