Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Origin of quantum spin liquid phase in $Ca_{10}Cr_7O_{28}$ HAN YAN, RICO POHLE, LUDOVIC JAUBERT, NIC SHANNON, Okinawa Institute of Science and Technology Graduate University — $Ca_{10}Cr_7O_{28}$ is a spin–1/2 magnet with a Kagomé–bilayer structure and complex competing interactions, which has recently been shown to support a quantum spin liquid state. In this talk we explore what can be learned about $Ca_{10}Cr_7O_{28}$ through a combination of analytic techniques, and classical Monte Carlo simulation. Despite the underlying complexity of the material, we find that the spin liquid in $Ca_{10}Cr_7O_{28}$ may admit of a deceptively simple explanation.

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Date submitted: 11 Nov 2016 Electronic form version 1.4