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Interlay of Quantum Criticality and Geometric Frustration in Columbite

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$CoNb_2O_6$ is a remarkable magnetic material. The interplay between two of the most exciting features of correlated quantum physics, quantum criticality and geometric frustration, results in a rich phase diagram which reflects the fundamental underlying quantum many-body physics in this complex oxide material. Many aspects of the theoretically calculated phase diagram and expectations for quantum criticality have already been observed in beautiful neutron scattering experiments on this material.

Ref: *Interplay of Quantum Criticality and Geometric Frustration in Columbite*, SungBin Lee, Ribhu K. Kaul, Leon Balents, Nature Physics **6**, 702-706 (2010)