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## Time-of-Flight Neutron Scattering From Exotic Quantum Ground States

*Wednesday 31 May 2017 08:50 (25 minutes)*

The advent of new time-of-flight neutron spectrometers at both spallation-based and reactor-based neutron sources has fundamentally changed the nature of the information that can be obtained using inelastic neutron scattering. Measurements on single crystals can now map out comprehensive four-dimensional (three momenta and one energy dimensions) data sets of inelastic scattering from both spin and lattice degrees of freedom. I will discuss the evolution of neutron sources since the discovery of the neutron by Chadwick in 1932, and show how revolutionary recent progress has been. The power of new time-of-flight techniques will be illustrated, taking examples from my groups studies of frustrated quantum magnets and materials related to high temperature superconductors.

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