

Invited Colloquium
University of Tennessee
Knoxville, TN
October 11, 2004

Title & Abstract:

Neutron Scattering at the Frontier of Condensed Matter Physics

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Most physicists in East Tennessee are aware that the Spallation Neutron Source will soon be the world's most powerful source of pulsed neutrons for neutron scattering research. At the same time, recent and ongoing upgrades to the facilities at the High Flux Isotope Reactor ensure that complementary world class capabilities for neutron scattering using continuous beams will exist at ORNL. This unique situation presents unparalleled opportunities for research in condensed matter physics as well as other areas of science. This talk will compare and contrast neutron scattering experiments at pulsed and continuous sources, illustrated by some real examples drawn primarily from research on quantum magnetism and highly correlated electron materials. Some of the exciting new instruments coming on board will be previewed, including the SEQUOIA chopper spectrometer at SNS and cold neutron instruments at HFIR.