



CERBERUS: The Multi-purpose Neutron Scattering Instrument at the First Target Station of the Spallation Neutron Source.

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The Neutron Scattering User Program at Oak Ridge National Laboratory in Oak Ridge, USA has long needed a single-crystal alignment station co-located with its Time-of-Flight Spectroscopy instrument suite. The First Target Station (FTS) at the Spallation Neutron Source (SNS) has an open beam port located at position 16a which looks at a poisoned-decoupled thermal-water moderator. The floor space in that area of the FTS instrument hall is limited and will only accommodate an instrument with a very compact design. We have identified an opportunity to utilize this flux and expand the experiment capability available at the SNS. The instrument will have two stations located at 20 meters and 31 meters. The availability of these two positions will provide opportunities to operate in three distinct modes: as an alignment station (SXA), a near-infrared Beryllium-filter spectrometer (BeFAST), and as a nuclear cross-section measurement station (XSM). We expect a new instrument of this type to complement existing capabilities at the SNS and HFIR and provide an opportunity to support new user communities and expand the scientific contributions of the SNS. Details of the expected instrument capability as well as a proposed layout and targeted user science cases will be presented.

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