



Contribution ID: 15

Type: **Talk**

## High Resolution High Energy Neutron Computed Tomography at LANSCE-WNR

*Tuesday, 22 October 2019 08:45 (30 minutes)*

It has long been recognized that neutrons can compliment x-rays for imaging. This is due to their very different attenuation characteristics based on nuclear cross-section, which allows imaging of low Z materials through higher Z materials. Additionally one can use energy dependent Time of Flight (ToF) imaging to exploit phenomenon like nuclear resonances for isotope and element specific imaging. The Los Alamos Neutron Science Center (LANSCE) accelerator is an 800 MeV proton linear accelerator which supplies protons to a range of missions including two spallation neutron targets, one moderated (water and liquid hydrogen) and one unmoderated. This combination of targets provides flight paths which have cold, thermal to epi-thermal and fast neutron energy ranges. In addition the proton pulse structure of the LANSCE accelerator provides neutron pulse lengths of < 270ns for the thermal/cold flight paths and < 1ns for the fast flight paths. These pulse lengths allow for energy discrimination from eV to ~100 MeV.

**Primary author:** Mr GAUTIER, Cort (LANL)

**Presenter:** WARD, William (Los Alamos National Lab)

**Session Classification:** Pulsed Neutrons

**Track Classification:** Applications