



Contribution ID: 27

Type: Oral

## High Voltage Generation and SQUID Applications in the SNS nEDM Experiment

*Wednesday, 18 October 2017 11:40 (25 minutes)*

In the SNS nEDM experiment, liquid helium at around 0.4 Kelvin will fill and surround the measurement cells. In addition to its roles in superthermal production of ultracold neutrons and scintillator, the liquid helium has excellent dielectric strength, and the planned electric field in the cells is  $\sim 75$  kV/cm. This field requires a voltage applied to the central electrode of  $\sim 650$  kV. Instead of feeding such a high voltage from an external source into the cryogenic central vessel, a major technical challenge, a much smaller voltage will be fed into the central volume and amplified. In this talk, I will describe current plans for 1) high voltage generation and 2) a device to perform non-contact measurement of the amplified voltage. Also, as a somewhat separate topic, I will describe progress in implementing SQUIDs into the experiment since the last nEDM workshop.

### Email

sclayton@lanl.gov

### Funding Agency

US DOE Office of Science, Nuclear Physics

**Primary author:** CLAYTON, Steven (Los Alamos National Laboratory)

**Presenter:** CLAYTON, Steven (Los Alamos National Laboratory)

**Session Classification:** WeMo2

**Track Classification:** Magnetic field sensors (atomic co-magnetometry, AQUIDS, fluxgate)