



Contribution ID: 206

Type: Oral

Upgrade of the iThemba LABS Fast Neutron Beam Facility towards ISO/IEC 17025 Accreditation

Monday, 20 September 2021 14:30 (20 minutes)

The iThemba LABS fast neutron beam facility (D-line vault) is an international niche facility that can provide ns-pulsed quasi-monoenergetic neutron beams in the energy range of 30 to 200 MeV. Other available neutron beam facilities, with energy range similar to this facility, are described in details by the EURADOS (European Radiation Dosimetry) Report [1]. In the D-line, quasi-monoenergetic neutron beams are typically produced via ${}^7\text{Li}(p,xn)$ or ${}^9\text{Be}(p,xn)$ reactions using proton beams available from the separated sector cyclotron (SSC). The facility first became operational in the late 1980s [2] and had remained practically unchanged for over 30 years. The Themba LABS fast neutron beam facility has been designated by the National Metrology Institute of South Africa (NMISA) to be an entity responsible for providing traceability for the medium and high-energy neutron measurements in South Africa. As a result, the facility has to undergo a major upgrade and development in order to achieve ISO/IEC 17025 accreditation status for the medium and high-energy neutron region. We present the status on the progress of the D-line vault upgrade, including preliminary results from previous measurements of the neutron background from the original configuration of the vault.

Primary author: NDABENI, Zina (University of Cape Town / iThemba LABS)

Presenter: NDABENI, Zina (University of Cape Town / iThemba LABS)

Session Classification: Session 3

Track Classification: Neutron Physics