



Contribution ID: 105

Type: Oral

MeASURE: the art and science of nuclear measurement at the University of Cape Town

Monday, 16 May 2022 14:00 (1h 30m)

The Metrological and Applied Sciences University Research Unit (MeASURE) was established in the Department of Physics at the University of Cape Town in 2018 to consolidate and expand research programs in applied nuclear physics, nanophysics, and measurement education and training. Integral to MeASURE is a robust understanding of reference standards, uncertainties, traceability, and how this translates into the development of novel measurement techniques to address real-world problems. Central to these activities is access to particle beams and radioisotopes through niche fast neutron facilities, proton therapy research beamline, and position emission particle tracking laboratories at the University of Cape Town and iThemba LABS.

We present the current state-of-the-art of neutron- and gamma ray-based research within MeASURE, including the development of detectors and instrumentation, advanced computation and stochastic modelling, and the applications of such measurements and techniques. A subset of current postgraduate students will present their research into modern fast neutron detector systems, positron emission particle tracking and prompt gamma ray imaging. Future avenues of research at MeASURE are explored with respect to the SDGs and potential impact to the African continent and beyond.

Primary authors: BUFFLER, Andy (UCT); Ms SOLE, Chloe (University of Cape Town); Mr DE KLERK, Josiah (University of Cape Town); Mr VAN HEERDEN, Mike (University of Cape Town); Mr VAN DER MERWE, Robert (University of Cape Town); Prof. PETERSON, Steve (University of Cape Town); Dr HUTTON, Tanya (University of Cape Town); Dr LEADBEATER, Tom (University of Cape Town); Dr NDABENI, Zina (University of Cape Town)

Presenters: BUFFLER, Andy (UCT); Ms SOLE, Chloe (University of Cape Town); Mr DE KLERK, Josiah (University of Cape Town); Mr VAN HEERDEN, Mike (University of Cape Town); Mr VAN DER MERWE, Robert (University of Cape Town); Prof. PETERSON, Steve (University of Cape Town); Dr HUTTON, Tanya (University of Cape Town); Dr LEADBEATER, Tom (University of Cape Town); Dr NDABENI, Zina (University of Cape Town)

Session Classification: The MeASURE experience