



Contribution ID: 19

Type: **not specified**

Measuring the neutron fields within Paarl Africa Underground Laboratory

Wednesday 17 January 2024 15:58 (15 minutes)

Construction of the Paarl Africa Underground Laboratory (PAUL) offers an opportunity for the community of austral African physicists to develop an international laboratory devoted to underground physics in the southern hemisphere. One of the main background components within PAUL will be energetic neutrons produced by cosmic rays, and neutron fluence rates ranging between 10^{-6} n/cm²/s to 10^{-5} n/cm²/s can be expected [1,2].

We discuss approaches for measuring the background neutron fields within PAUL, which will be supported by the existing fast neutron beam facilities at the University of Cape Town and iThemba LABS.

[1] K. Eitel and the EDELWEISS collaboration. Measurements of neutron fluxes in the LSM underground laboratory. *J. Phys.: Conf. Ser.* 375 (2012) 012016. doi:10.1088/1742-6596/375/1/012016

[2] Y.S. Yoon, J. Kim and H. Park. Neutron background measurement for rare event search experiments in the YangYang underground laboratory. *Astropart. Phys.* 126 (2021) 102533. <https://doi.org/10.1016/j.astropartphys.2020.102533>

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Session Classification: Neutron flux and Radiochemistry