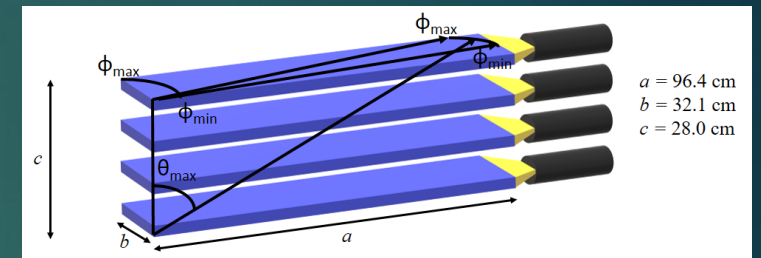
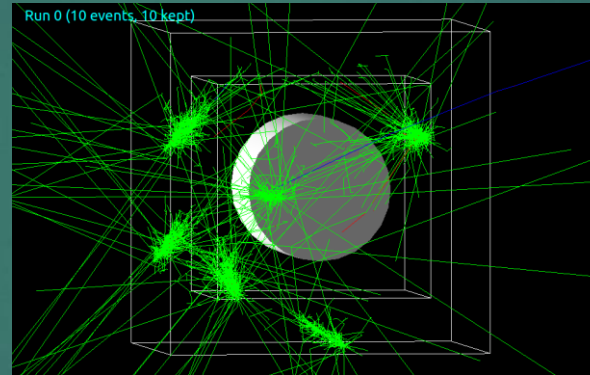
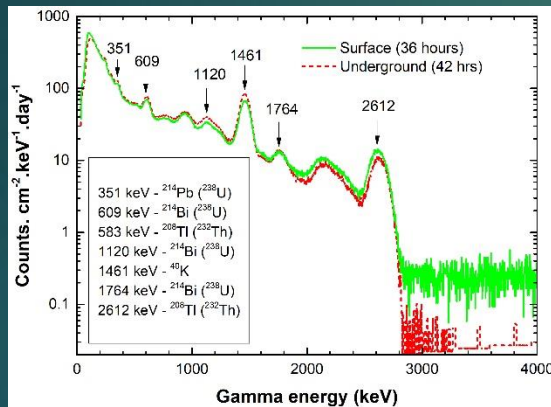


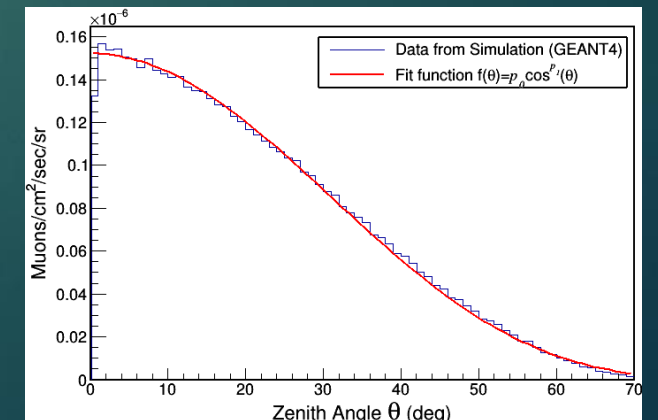
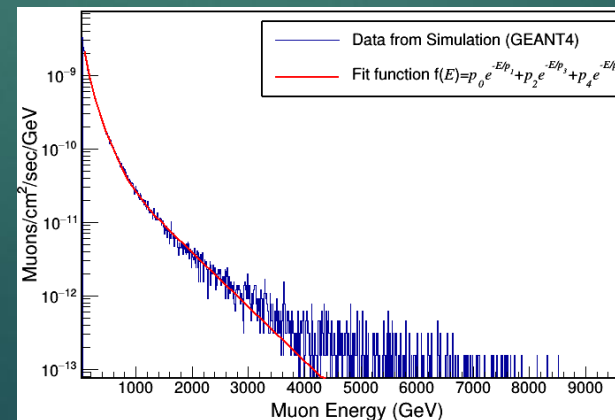
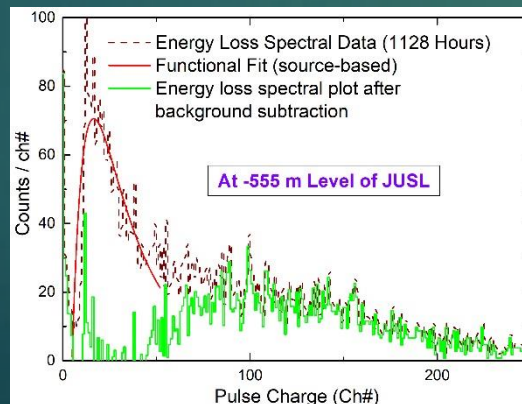
Measurements and Simulation of background radiation for rare event search experiments at an underground laboratory

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- ▶ Rare event searches, like direct Dark Matter (DM) searches, neutrino-less double beta decay (NDBD), etc., look for extremely small signals \longrightarrow extremely low events rates \longrightarrow accurate background measurement required.
- ▶ Gamma ray background was measured and shielding possibilities with lead was optimized.

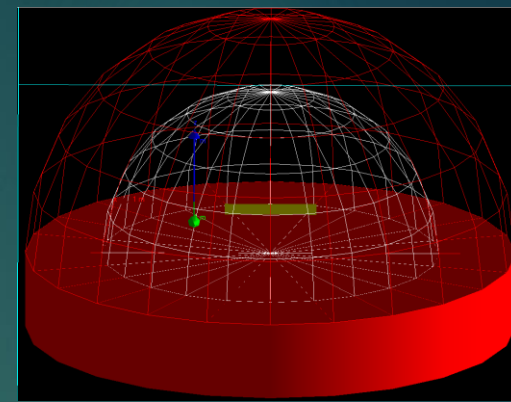
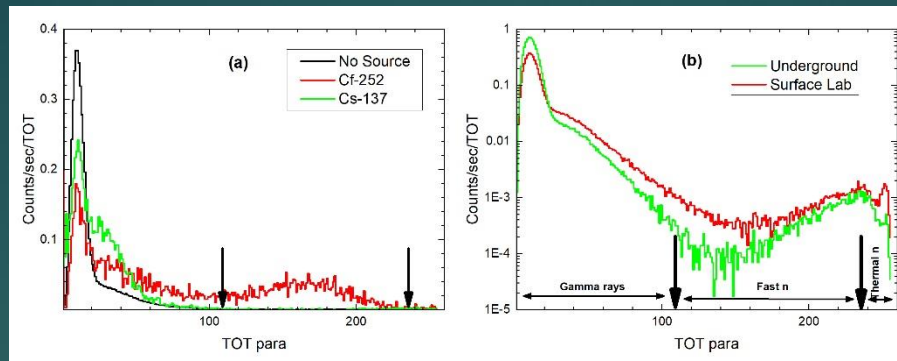


- ▶ Cosmic muon and neutron, both radiogenic and cosmogenic, were measured experimentally and matched with simulation.



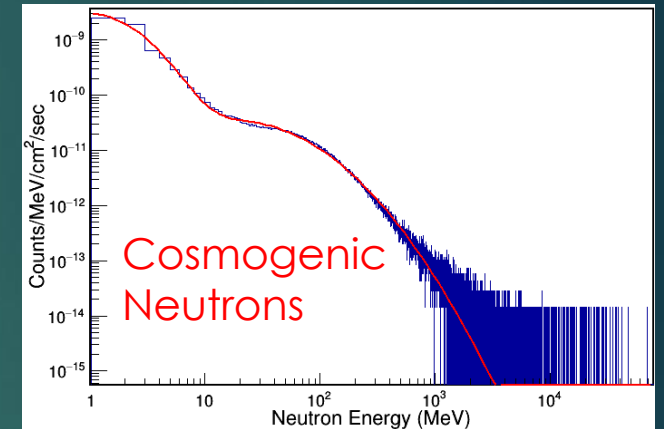
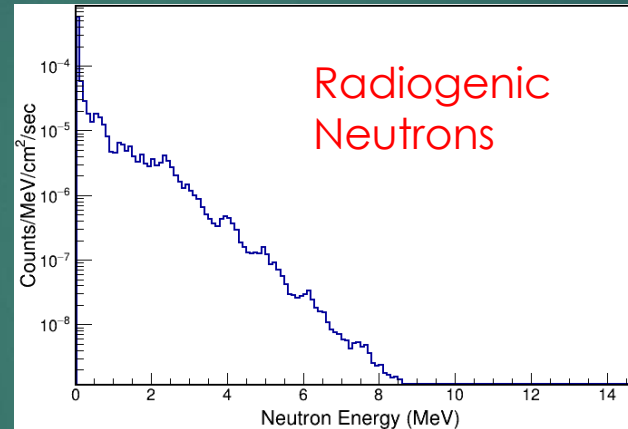
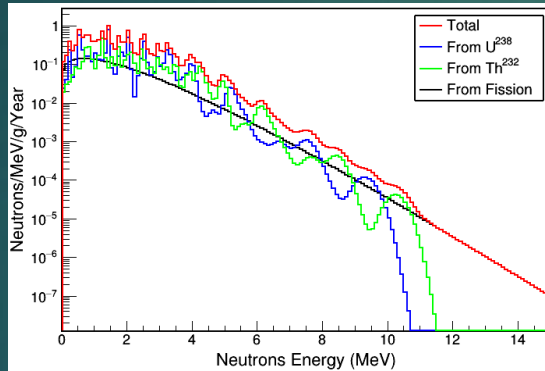


600 mm long cylinder with an inner diameter of 65 mm with ^4He kept at 150-180 bar.



2.2 m radius

- Neutrons are generated from the (α, n) reactions from decay of ^{238}U , ^{232}Th and their decay remnants and their spontaneous fission in the surrounding rock.



- Simulation results agreed with global fits.

