

Background radiations in underground laboratories

Postgraduate course

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Syllabus

1. Introduction. Underground laboratories.
2. Types of background: gamma-rays, neutrons from radioactivity, neutrons from cosmic rays, radon.
3. Gamma-rays from radioactivity, gamma-ray interactions, transport and shielding.
4. Neutrons from radioactivity, (alpha,n) reactions, neutron yields and energy spectra, neutron transport, shielding.
5. Muons: muon interactions, muon transport, muon intensities underground.
6. Muon induced neutrons: neutron production, neutron interactions and transport.
7. Activation: activation cross-sections and decay rates.