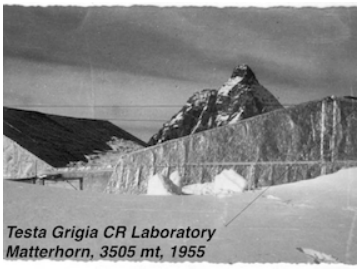

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Effect of pressure and temperature corrections on muon flux variability at ground level and underground

Tuesday, September 6, 2016 2:45 PM (15 minutes)

In Low Background Laboratory at Institute of Physics Belgrade, plastic scintillators are used to continuously monitor flux of the muon component of secondary cosmic rays. Measurements are performed on the surface as well as underground (25 m.w.e depth). Temperature effect on muon component of secondary cosmic rays is well known and several methods to correct for it are already developed and widely used. Here, we apply integral method to calculate correction coefficients and use GFS (Global Forecast System) model to obtain atmospheric temperature profiles. Atmospheric corrections reduce variance of muon flux and lead to improved sensitivity to transient cosmic ray variations. Influence of corrections on correlation with neutron monitor data is discussed.

Summary

*Description of the experiment*Some aspects of pressure and temperature effect on muon component of secondary CR
*GFS and weather balloon data comparison*Raw and corrected time series
*Comparison with neutron monitor data

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