

Cosmic ray flux measurements at Belgrade cosmic rays station during Solar cycle 24

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It has been well known for more than half a century that solar activity is responsible for modulation of galactic cosmic ray reaching Earth (Potgieter 2013). Low-background Laboratory for Nuclear Physics at the Institute of Physics, Belgrade is dedicated to low-background spectroscopy and cosmic rays measurement. Measurements are performed at interconnected spaces: at the surface level (78m a.s.l.) and in the underground laboratory at the depth of 25 m.w.e. with identical sets of detectors and analyzing electronics thus creating opportunity to monitor simultaneously muon flux at different energies. The cosmic-ray muon count rate and energy loss spectra in plastic scintillator detectors are recorded and from experimental data and with the use of GEANT4 computer simulation the flux and vertical intensities have been determined (Veselinović *et al.* 2017). The aim of the present work is to present study of energy dependent solar modulation process during Solar cycle 24 utilizing a shallow underground laboratory with detector configuration sensitive to primaries in the energy region exceeding sensitivity of neutron monitors (Savić *et al.* 2019).

References

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