

CONSTRAINTS ON THE ALL NUCLEON FLUX FROM MEASUREMENTS OF DOWN-GOING TEV MUONS IN DEEP UNDERGROUND DETECTORS, AND THE PREDICTION OF THE NEUTRINO INDUCED UP-GOING MUON FLUX

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The prediction of the neutrino induced up-going muon flux requires a description of primary nucleon flux in the energy range $E/\text{nucleon} = 10^2\text{--}10^5$ GeV. In this work we discuss the constraints on the nucleon flux in this energy range obtained from the measurements of down-going TeV muons in deep underground detectors. This data suggests a nucleon flux higher than the estimates obtained from direct c.r. measurements. We discuss the significance of this disagreement, its implications and possible solutions.