ATMOSPHERIC MUON FLUXES UNDERWATER AS TOOLS TO PROBE SMALL X-BEHAVIOR OF THE GLUON DISTRIBUTION

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We compute deep-sea energy spectra and zenith-angle distributions of the atmospheric muons both conventional and prompt. The prompt muon contribution at high energies to the down-going muon flux underwater is calculated taking into account the sea-level prompt muon fraction issued from the recent pQCD charm production model in which probed is the small-x behaviour of the gluon distribution function inside of a nucleon. We argue for the possibility to discriminate the pQCD models of the charm production, that differ in the slope of the gluon distribution, in measurements of the deep-sea muon flux at energies 10-100 TeV with neutrino telescopes.