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A Relation Between Charged Particles and Muons With Threshold Energy 1 GeV in Extensive Air Showers Registered at the Yakutsk EAS Array

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For a long time the three main components of extensive air showers have been measured at the Yakutsk array: the whole charged component, muons with $E_{\text{th}} \geq 1$ GeV and Cherenkov light. Using these data we reconstruct energy of primary cosmic particle (with quasi-colorimetric method), estimate the depth of shower maximum (by the shape of charged particles lateral distribution and a pulse shape of Cherenkov light response in differential detector, $t_{1/2}$) and measure relative muon content at different core distances. In this work we consider a relation s_{μ}/s_{ch} between charged and muon components in showers and its fluctuations at fixed energies. The goal of this analysis is to make a comparison between experimental and computational data for different primaries and to obtain an estimation of cosmic rays mass composition in the ultra-high energy domain.

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