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Proton Fraction in the PCR Flux at the Energy Range E_0=1-100 PeV According to the Pamir Experiment Data

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A detailed study of X-Ray emulsion chamber response with ECSim 2.1 computer package adopted from GEANT 3.21 code and suited for imitation of measuring procedures, employed in the Pamir experiment makes it possible to determine more accurately the proton fraction in the primary cosmic ray (PCR) flux at energies around the "knee" E_0=1-100 PeV. In particular, it is shown that the proton fraction in the PCR slowly decreases from 20% at E_0 ~ 1 PeV to 15% at E_0 ~ 10 PeV.

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