XVI International Symposium on Very High Energy Cosmic Ray Interactions (ISVHECRI 2010)



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Cosmic ray composition around the knee.

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The Ne spectra for EAS and EAS with gamma-families are analyzed (Experiment "Hadron"-Tien-Shan). Presence thin structure (peaks) in EAS spectrum with gamma-families and necessity of simultaneous approximation of two spectra (EAS and EAS+ γ) essentially the same mass composition limits possible models of nucleus individual spectra. The elementary variant of model when spectra of all five nuclear groups are similar is considered. Satisfactory approximation of both spectra Ne for EAS and EAS with gamma-families turns out in the assumption of magnetic rigidity of a break in spectra R=0.13 PV and presence of two peaks in the nuclear spectra at values of magnetic rigidity R=0.13 and 5.4 PV. This form of nuclear spectra permits to suggest two component CR composition. Presence of peaks in the nuclear spectra is explained by the contribution of radiation of single close source CR.

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