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Tunka-133: the First Results and Perspectives

Registration of EAS Cherenkov light at the new Tunka-133 array let us use the Earth atmosphere as a huge calorimeter for very high energy primary particles. The preliminary all particles energy spectrum in the range 6.1015 – 1018 eV is collected during two winter seasons since 2009 till 2011. The depth of EAS maximum Xmax for each event is derived from the measured steepness of the Cherenkov light lateral distribution function. The mean Xmax vs. primary energy in the range 6.1015 – 3.1017 eV and the analysis of Xmax distributions in the narrow energy bins are discussed. The Tunka-133 array was upgraded last year with 6 remote clusters enlarging the effective area to about 4 times. The perspectives of this new array version are presented.

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