

The EAS counting rate during thunderstorms.

EASTOP Collaboration

Some episodes in which perturbed atmospheric conditions during thunderstorms affect the counting rate of Extensive Air Showers have been observed by the EAS array EASTOP. The most significant of them are discussed. They consist of counting rate increases of duration ~10 minutes. The entity of the effect is ~10-15%, and it is larger for larger shower sizes. It is observed mostly for showers whose direction is orthogonal to the ground. The EAS increases are accompanied by increasing counting rates of single ionizing particles. The effect is compatible with an additional acceleration of the shower particles by strong atmospheric electric fields.