

ENERGY DISTRIBUTION OF PRODUCED PARTICLES IN MULTIPLE PARTICLE PRODUCTION BASED ON DATA OF DIRECT OBSERVATION

A. OHSAWA(1), E.H. SHIBUYA(2) AND M. TAMADA(3)

(1) ICRC, Univ. of Tokyo, (2) IFGW, Univ. Estadual de Campinas, (3) Fac

The energy distribution of produced particles in multiple particle production is formulated based in the data of direct observation by accelerator and cosmic-ray experiments at 10^{12} - 10^{14} eV.

The formulated distribution indicates violation of the Feynman scaling law, which is shown to be valid in low energy region of $< 10^{12}$ eV.

That is, the particle density is suppressed in the forward region and enhanced in the central region, compared with the distribution of the Feynman scaling law.

Consequences of the formulated distribution, such as multiplicity, inelasticity, etc., are discussed at high energy of $> 10^{15}$ eV.

The distribution is compared with those of nuclear interaction models which are used widely in the simulations in accelerator and cosmic-ray experiments.