



Contribution ID: 33

Type: **not specified**

”Buddha’s light” of cumulative particles

Tuesday 9 September 2014 16:50 (20 minutes)

We show analytically that in the cumulative particles production off nuclei multiple interactions lead to a glory-like backward focusing effect. Employing the small phase space method we arrived at a characteristic angular dependence of the production cross section $d\sigma \sim 1/\sqrt{\pi - \theta}$ near the strictly backward direction. This effect takes place for any number $n \geq 3$ of interactions of rescattered particle, either elastic or inelastic (with resonance excitations in intermediate states), when the final particle is produced near corresponding kinematical boundary. In the final angles interval including the value $\theta = \pi$ the angular dependence of the cumulative production cross section can have the crater-like (or funnel-like) form. Such a behaviour of the cross section near the backward direction is in qualitative agreement with some of available data.

Author: Prof. KOPELIOVICH, Vladimir (Institute for Nuclear Research of RAS)

Co-authors: Dr MATUSHKO, Galina (Institute for Nuclear Research of RAS); POTASHNIKOVA, Irina (UTFSM)

Presenter: Prof. KOPELIOVICH, Vladimir (Institute for Nuclear Research of RAS)

Session Classification: Parallel VI: F4 Nuclear and Astroparticle Physics

Track Classification: Section F: Nuclear and Astroparticle Physics