



Contribution ID: 43

Type: **not specified**

The Low theorem for diffractive bremsstrahlung and the soft photon puzzle

Thursday, 29 September 2022 09:10 (20 minutes)

The anomalous excess of small- k_T photons radiated along with multi-hadron production, is challenging the physics community over four decades, but no solution has been proposed so far. We argue that the problem is rooted in the comparison with an incorrect model, usually called “bremsstrahlung model”.

The Low theorem, proven only for diffractive photon radiation, relates it to the elastic scattering amplitude. The latter is linked by the unitarity relation to the square of the multi-hadron production amplitude. Therefore the cross section of photon radiation from the final state of multi-hadron production is related to the inner radiation for the elastic hadronic amplitude, which was proven by Francis Low to vanish in the soft photon limit.

We propose an alternative color-dipole description for soft photon radiation, which well agrees with available data.

Presenters: KOPELIOVICH, Boris; KOPELIOVICH, Boris

Session Classification: Soft and low-mass diffraction

Track Classification: Soft and low-mass diffraction