

## Comparative studies of pion spectra in p+p and Pb+Pb collisions (part II)

*Sunday, 6 November 2016 11:20 (25 minutes)*

In the previous Workshop in this series I addressed the characteristic structures in the ratio of negative pion spectra in Pb+Pb divided by p+p collisions, published by NA61/SHINE collaboration. This included in particular the enhancement of  $\pi^-$  production at low transverse momenta and/or high rapidities.

In the present talk I will discuss this enhancement as an interesting example of convolution of strong and electromagnetic effects, involving both produced pions and spectator nucleons. The evolution of trajectories of charged pions emitted at freeze-out in the EM field of the spectator system, and the possibility of reinteraction with the nuclear remnant, will be studied by means of a relativistic Monte Carlo model and compared to experimental data. The resulting overall effect breaks isospin symmetry, and appears to be directly connected to the charge dependence of the “sea-gull” effect in peripheral Pb+Pb collisions which can now be re-interpreted as a (mainly) electromagnetic and (partially) isospin effect.

Emphasis in the talk will be put on (1) the possibility of using the observed enhancement of  $\pi^-$  production as another independent source of information on the longitudinal space-time evolution of the system, and (2) the excellent acceptance of the NA61/SHINE detector, allowing for detailed studies of not only electromagnetic but also strong phenomena connected to the presence of spectators in Ar+Sc and Pb+Pb collisions.

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