

The onsets of deconfinement and fireball of NA61/SHINE

Thursday, 7 June 2018 15:00 (0:20)

Collaboration

NA61/SHINE

Abstract content

The NA61/SHINE experiment at the CERN SPS is pursuing a rich programme on strong interactions, covering the study of the onset of deconfinement and aims to discover the critical point of the strongly interacting matter by performing an energy and system-size scan at the full CERN SPS momentum range. These scans of p+p, p+Pb, Be+Be, Ar+Sc and Pb+Pb have been mostly completed with Xe+La last year (more Pb+Pb to be taken this year).

Results from the different reactions are now emerging. As a surprise, some measurements did not scale smoothly. In particular, for the K^+/π^+ ratio, Be+Be collisions behaved similarly to p+p (as a superposition of nucleon collisions), while Ar+Sc was closer to Pb+Pb collisions. This step can not be explained by the onset of deconfinement and may indicate that there is also an onset of a fireball in relativistic heavy ion collisions. A review of the results, as well as possible interpretation, will be presented. The theoretical models (SMES, PHSD) describe the onset of deconfinement at the heaviest system relatively well. However, no model describes the behavior of data at previously unmeasured collisions of light and intermediate size ions. The onset of the fireball is not described by any model.

Primary author(s) : LARSEN, Dag (Jagiellonian University (PL))

Presenter(s) : LARSEN, Dag (Jagiellonian University (PL))

Session Classification : Parallel Session A1