



Contribution ID: 175

Type: **Talk**

Results on system size dependence of strangeness production in the CERN SPS energy range from NA61/SHINE

Tuesday 14 June 2022 15:20 (20 minutes)

NA61/SHINE is a multipurpose fixed-target facility at the CERN Super Proton Synchrotron. The main goals of the NA61/SHINE strong interactions program are to discover the critical point of strongly interacting matter and study properties of the onset of deconfinement. To reach these goals, hadron production measurements are performed in the form of a two-dimensional scan by varying collision energy and system size. The Collaboration has recently finished data acquisition for its original program on strong interactions, accumulating broad data samples on hadron production in various systems in the SPS energy range.

In this contribution, the NA61/SHINE results on identified charged kaon and pion production in p+p, Be+Be and Ar+Sc collisions at SPS energy range ($\sqrt{s_{NN}}=5.1-17.3$ GeV) will be presented. The NA61/SHINE measurements of small and intermediate mass ion collisions establish an interesting system size dependence, showing a rapid change of hadron production properties that starts when moving from Be+Be to Ar+Sc system. In particular, Ar+Sc is the smallest system for which a significant enhancement of K^+/π^+ ratio with respect to p+p collisions is observed. Obtained energy and system size dependence of the measured charged hadron multiplicities will be compared with available world data and various theoretical models.

Present via

Online

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Session Classification: PA-Light-flavor and Strangeness

Track Classification: Light-flavor and Strangeness