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NA61/SHINE results on multiplicity and net-charge fluctuations at CERN SPS energies

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The NA61/SHINE strong interaction program is dedicated to exploring the phase diagram of strongly interacting matter. Its primary goals are to study the onset of deconfinement and to search for the critical point within this type of matter. To accomplish these objectives, the program conducts scans over a range of beam momenta (from 13A to 150A/158A GeV/c) and system sizes, involving collisions such as p+p, p+Pb, Be+Be, Ar+Sc, Xe+La, and Pb+Pb. Achieving these goals necessitates a diverse array of measurements.

In this contribution, we present final results on how multiplicity and net-charge fluctuations depend on system size and energy, analyzed using higher-order moments by comparing p+p and Ar+Sc most central interactions. The results take into account detector bias and centrality selection in the case of Ar+Sc. The results are compared across different energies, as well as against model predictions.

Category

Experiment

Collaboration (if applicable)

NA61/SHINE

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