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Type: **Talk**

Investigation of the onset of deconfinement with the NA61/SHINE experiment

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High-energy heavy-ion collisions provide a unique framework for studying the phase transition of strongly interacting matter. The NA61/SHINE experiment, located in the North Area of CERN's SPS, is a fixed-target facility designed to perform a systematic exploration of the QCD phase diagram. This is achieved through a two-dimensional scan that varies both the beam momentum (from 13A to 150/158A GeV/c) and the size of the colliding systems (p+p, p+Pb, Be+Be, Ar+Sc, Xe+La, Pb+Pb). Such a wide scan enables detailed studies of how collision dynamics evolve with system size and energy.

A central objective of the NA61/SHINE research program is to investigate the onset of deconfinement—the transition from hadronic matter to a quark-gluon plasma—by analyzing observables such as the strangeness-to-entropy ratio. According to the Statistical Model of the Early Stage (SMES), this ratio is expected to exhibit a horn-like structure within the SPS energy range. This presentation discusses the theoretical framework of the SMES, its assumptions, and compares recent NA61/SHINE results with other experimental data worldwide, contributing to a deeper understanding of the QCD phase transition.

Internet talk

Maybe

Is this an abstract from experimental collaboration?

Yes

Name of experiment and experimental site

NA61/SHINE experiment

Is the speaker for that presentation defined?

Yes

Details

The abstract is an invited talk

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Session Classification: Heavy Ion Collisions and Critical Phenomena

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