

XVII Polish Workshop on Relativistic Heavy-Ion Collisions: Phase diagram and Equation of State of strongly interacting matter



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Antibaryon production in pp interactions at $\sqrt{s} \sim 10$ GeV: statistical hadronization and $p+\bar{p}$ scaling?

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The experimental particle yields (36 multiplicities in total) from pp interactions around $\sqrt{s} \sim 10$ GeV are reasonably described [1] within statistical hadronization model ThermalFist [2]. The volume for strangeness was used as an additional free parameter, essential for the quality of the reproduction of experimental results ($-3 \pm 17\%$ average relative difference). Among the measured yields, antibaryons (except antiprotons) are very rare. The multiplicity of antiprotons production is found to depend almost quadratically (1.86 ± 0.11) on the available energy corrected for the threshold energy of producing baryon-antibaryon pair. This energy dependence, with appropriate scaling, surprisingly well describes the yields of other antibaryons (\bar{n} , $\bar{\Lambda}$, $\bar{\Xi}$, $\bar{\Xi}(1520)$) calculated within the statistical hadronization model and/or obtained experimentally. However, this simple scaling does not apply to the energy dependence predicted for antideuterons.

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