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## Precision measurements of inclusive hadron production in p+p and p+C interactions at the CERN SPS

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In the framework of a general study of hadron production in elementary and nuclear interactions at the CERN SPS the NA49 experiment has produced new and complete sets of inclusive meson and baryon cross sections in p+p and p+C interactions [1-8]. This work is aimed at providing precision data over most of the available phase space with a special emphasis on completeness, internal consistency and on the comparison to a wide range of existing experimental results. In particular a new critical analysis of kaon production in p+p collisions from threshold to collider energies [3] as well as a survey of backward pion and proton production from 1 to 400 GeV/c beam momentum in p+C interactions [7] has been provided. The corresponding physics analysis allows for a model-independent study of soft hadronic production with a view to a critical assessment of the applicability of the current approaches to the non-perturbative sector of QCD. In this context the precision study of p+A interactions opens a new access to the scrutiny and understanding of multiple hadronic collisions concerning specifically detailed nuclear and isospin effects including strangeness. In addition these data may serve as a reference for neutrino and astro-particle physics.

1. C. Alt et al., Eur. Phys. J. C45 (2006) 343
2. T. Anticic et al., Eur. Phys. J. C65 (2010) 9
3. T. Anticic et al., Eur. Phys. J. C68 (2010) 1
4. C. Alt et al., Eur. Phys. J. C49 (2007) 897
5. G. Barr et al., Eur. Phys. J. C49 (2007) 919
6. B. Baatar et al., arXiv:1207.6520v1 [hep-ex]
7. O. Chvala et al., arXiv:1210.6775[nucl-ex]
8. p+C-> kaons to be published

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