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Hadron production measurement from NA61/SHINE

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New results from the NA61/SHINE experiment on the determination of charged hadron yields in proton-carbon interactions are presented. They aim to improve predictions of the neutrino flux in the T2K experiment. Analysis is based on the main dataset collected by NA61/SHINE in the year 2009.
The data were recorded using a secondary-proton beam of 31 GeV/c momentum from CERN SPS which impinges on a graphite target. To determine the inclusive production cross-section for charged pions, kaons and protons the thin (0.04 λI) target was exploited. Results of this measurement are used in the T2K beam simulation program to reweight hadron yields in the interaction vertex. At the same time, NA61/SHINE results obtained with the T2K replica target (1.9 λI) allow to constrain hadron yields at the surface of the target. It would correspond to the constraint up to 90% of the neutrino flux, thus reducing significantly a model dependence of the neutrino beam prediction. All measured spectra are compared to predictions of hadron production models.
In addition a status of the analysis of data collected by NA61/SHINE for the NuMI target (Fermilab) is reviewed. These data will be used further in neutrino beam calculations for the MINERvA, MINOS(+) and LBNE experiments.

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