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Hadron production at fixed target energies and extensive air showers

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NA61/SHINE is a fixed-target experiment to study hadron production in hadron-nucleus and nucleus-nucleus collisions at the CERN SPS. Due to the very good acceptance and particle identification in forward direction, NA61/SHINE is well suited for measuring particle production to improve the reliability of air shower simulations. We show the energy and phase space regions of secondary particles in hadronic interactions that are of relevance to muon production in air showers. These phase space regions of interest are almost completely covered by NA61/SHINE. Data with proton and pion beams have been taken in 2007 and 2009. First analysis results for the pion yield in proton-carbon interactions at 30 GeV will be shown and compared to predictions from models used in air shower simulations. Implications of the results will be discussed and planned analyses outlined.

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