

## NA61 data for T2K flux calculations

For the NA61 and T2K Collaborations

The approved T2K neutrino oscillation physics program requires a 5% neutrino flux determination and the ability to extrapolate the neutrino flux from near to far detector with a precision of 3%. This implies a knowledge of the hadron production with an accuracy of about 10%, while present Monte Carlo models differ significantly more.

The NA61 experiment at the CERN North Area, using a 30 GeV proton beam on Carbon targets, measures hadron production over all the phase space needed by the T2K experiment and aims at producing a measurement of particle yields with a precision of 5% or better for pions and 10% for Kaons.

A thin target is used to measure the inclusive inelastic cross-section of charged pions, kaons and protons as function of momentum and angle, in the primary interactions of 30 GeV protons on Carbon. A replica of the T2K production target is also used to get a measurement of reinteractions inside the target itself and to directly measure the hadron production yields off the T2K target, which can be used as input to the neutrino beam simulation.

**Primary author:** Dr ESPOSITO, Luigi Salvatore (Eidgenossische Tech. Hochschule Zuerich (ETHZ)-Unknown-Unknown)

**Presenter:** Dr ESPOSITO, Luigi Salvatore (Eidgenossische Tech. Hochschule Zuerich (ETHZ)-Unknown-Unknown)