

Measurement of Δ_s with Neutrino-Nucleon Elastic Scattering at J-PARC

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Contribution of strange quark spin to the proton spin, Δ_s , is one of the major interests in connection with the 'Proton Spin Problem'. Neutrino-nucleon elastic scattering is the only method to determine directly the total value of Δ_s , while lepton DIS measures the distribution over Bjorken- x , so an extrapolation to the unmeasured x range is always needed.

J-PARC is constructing now a neutrino beam of the highest intensity in the world around 1 GeV. Extensive physics simulation has been done on the Δ_s measurement using two liquid scintillator targets along the beam line. A set of targets of different Hydrogen-Carbon mixtures enables a separation between neutrino-nucleon scattering and neutrino-nucleus scattering.

I will present the status of this experiment, focusing on the projection of the sensitivity of the Δ_s determination.

Its impact on the Proton Spin Problem is also shown.