

Measuring Neutrino-Nucleon Cross-Sections with FASERnu

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In collider experiments, very light new particles are produced in the far-forward direction with small angle relative to the beam axis. The ForwArd Search ExpeRiment (FASER) is aptly located 480 m downstream from the ATLAS interaction point where background is minimal. The FASERnu emulsion detector, positioned just upstream of FASER, will detect collider-produced neutrinos for the very first time. The average cross sections of neutrinos and antineutrinos will be measured in the unexplored energy region 350 GeV - 3 TeV. In addition, the interface detector enables track matching between the FASER spectrometer and the FASERnu emulsion detector, which enables separate cross section measurements for mu neutrinos and antineutrinos. I will present the resolving power of the FASER spectrometer and the sensitivity of FASERnu to measuring neutrino-nucleon charged current (CC) cross sections.

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Yes

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