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The inclusive production of the meson resonances in neutrino-nucleon interactions

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The inclusive production of the meson resonances $\rho^0(770)$, $f_0(980)$, $f_2(1270)$, $K^{*+}(892)$ in neutrino-nucleon interactions has been studied with the NOMAD detector. The detector was exposed to the wide band neutrino beam generated by 450-GeV protons at CERN SPS. For the first time the $f_0(980)$ meson is observed in neutrino interactions. The presence of $f_2(1270)$ in the neutrino interactions is reliably established. The average multiplicity of these three resonances is measured as a function of several kinematic variables. The experimental results are compared to the multiplicities obtained from a simulation based on the Lund model. Matrix element of spin density matrix for $K^{*+}(892)$ meson have been measured.

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