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New Results for the Production of Λ and Σ^0 Hyperons in antineutrino scattering from proton by using new form factors data LINGLING WEN, STEPHAN MINTZ, Florida International University — We obtain total and differential cross sections for the strangeness changing charged current reactions $\bar{\nu_L} + p \longrightarrow \Lambda + L^+$ and $\bar{\nu_L} + p \longrightarrow \Sigma^0 + L^+$ where L is a charged lepton, either an electron, muon or tau. We do this by making use of the standard dipole form factors normally used and for new form factors recently obtained from recoil proton measurements in electron-proton electromagnetic scattering. We also obtain the contributions of the individual form factors to the total and differential cross sections for both sets of form factors. We find that the differential and total cross sections for Λ production change only slightly between the two sets of form factors but that the differential and total cross sections change substantially for Σ^0 production. We discuss the possibility of distinguishing between the two cases for the experiments planned by the MINERνA Collaboration.

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