Contribution ID: **28** Type: **not specified**

Xi* productions with Regge contribution

Wednesday 20 August 2025 13:25 (25 minutes)

The production of the excited states of the Ξ^- hyperon from proton-kaon collision, $p+K^- \to \Xi^{*-}+K^+$, with the s- and u-channel processes has been studied. We employed the effective Lagrangian method to describe the production of Ξ^{*-} and utilized the Regge model for the u-channel process. To determine the couplings and the form factors for Ξ^{*-}, we also carry out the quark model calculation by using the baryon wave functions of the constituent quarks with the quark-diquark description. As a result, we predicted the production rates of $\Xi^-(1320)$, $\Xi^{*-}(1530)$, and some excited states of $l = 1$. The relation between the production rates of the final state Ξ^{*-} and the baryon structures of the Ξ^{*-} and the intermediate states such as Λ, Σ^0, and Σ^{*0} are discussed.

Author: SHIM, Sang-In (RCNP, Osaka University)

Co-author: HOSAKA, Atsushi

Presenter: SHIM, Sang-In (RCNP, Osaka University)

Session Classification: Researcher session