

$\Lambda(1405)$ photoproduction at SPring-8/LEPS

H. Fujimura and M. Niiyama, for the LEPS collaboration

*Department of Physics, Kyoto University, Kyoto, 606-8502, Japan
Research Center for Nuclear Physics, Osaka University, Osaka, 657-0047 Japan,*

The structure of $\Lambda(1405)$ is a long standing question in hadron physics whether $\Lambda(1405)$ is the spin-multiplet partner of $J^\pi = 3/2^- \Lambda(1520)$ or a Meson-Baryon resonance. Recent theoretical works based on chiral dynamics predict its lineshape to be different in $\pi^+\Sigma^-$ and $\pi^-\Sigma^+$ channels due to interference of $I=0$ and $I=1$ amplitudes. The same model predicts the modification of mass spectrum of $\Lambda(1405)$ in nuclear medium.

The hyperon photo-production experiment has been performed at SPring-8/LEPS with polyethylene, carbon and copper targets. The energy range of the backward compton scattering photon was 1.5 - 2.4 GeV.

In this talk, I will report the experimental details and status of the analysis of $\Lambda(1405)$ lineshape from proton and carbon nucleus.