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Search for ${}^{6}_{\Lambda}$H hypernucleus by the (π^-, K^+) reaction at p_π=1.2GeV/c HITOSHI SUGIMURA, Japan Atomic Energy Agency, J-PARC E10 COLLABORATION — The study of neutron-rich hypernuclei is one of the most important topics in the strangeness nuclear physics. The glue-like role of the Λ hyperon is expected to be critical in nuclei beyond the neutron-drip line. The knowledge of the behavior of hyperons in a neutron-excess environment will significantly affect our understanding of neutron stars because the addition of hyperons softens the Equation of State of matter at the core. To study its effects, we selected the ${}^{6}_{\Lambda}$H hypernucleus. An experiment was proposed aiming at a precise spectroscopic investigation of the light neutron-rich hypernucleus ${}^{6}_{\Lambda}$H by the (π^-, K^+) reaction. The experiment was performed at the K1.8 beam line of the J-PARC Hadron Experimental Facility. Since the cross section of the (π^-, K^+) reaction is considerably small, high intensity pion beams of 12-14 M/spill were used. Totally 1.4×10^{12} were irradiated on a ^{6}Li target. In this talk, details of the data analysis will be presented and the physical meaning of the first results will be discussed.

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