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Development of neutron polarization measurement system for studying the medium effect on NN interaction JUMPEI YASUDA, Department of Physics, Kyushu University — Modification of nucleon and meson properties in nuclear medium is one of the most interesting topics in nuclear physics. To investigate the medium effect on NN interaction, quasi-elastic reaction is one of the most powerful tool. Especially, the spin observables are very useful since it is insensitive to distortion effect. For the proton-proton interaction, the analyzing power and polarization transfer have been measured for exclusive (p,2p) reaction. On the other hand, for the proton-neutron interaction, the polarization transfer have been measured only for inclusive (p,n) reaction. Therefore, we plan to measure the polarization transfer for exclusive (p,np) reaction. To achieve the measurement, we developed the neutron polarization measurement system for (p,np) reaction, which has following two component; (1) neutron polarization measurement; (2) exclusive measurement. For the neutron polarization measurement, we have reconstructed the neutron polarimeter NPOL3. We have calibrated the new NPOL3 by using the polarized neutron from 2H(p,n) reaction and obtained the effective analyzing power $Ay_{\text{eff}} = 0.127$. For the exclusive measurement, we used the LAS spectrometer for recoil proton detection and achieved the energy resolution of 6 MeV.

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