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Study of the Eta Meson Production with the Polarized Proton Beam

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The eta meson production process can be studied via measurements of the analyzing power, Ay, which may be understood as a measure of the relative deviation between the differential cross section with and without polarized beam. So far, these observables have been determined only for a few excess energies and with very low statistics. Therefore, the measurement of the (vec)pp->pp eta reaction was performed at WASA-at-COSY detector and the experiment was conducted for beam momenta of 2026 MeV/c and 2188 MeV/c.
Protons from the (vec)pp->pp reaction are registered in the forward and the central part of the detector. Gamma quanta from the eta decay are detected in the Electromagnetic Calorimeter.
Additionally, in order to monitor the beam polarization, the luminosity and the detector performance, the (vec)pp->pp reaction was measured as well, and in order to control effects caused by potential asymmetries in the detector setup, the spin of the proton beam was flipped from cycle to cycle.
The status of the analysis will be presented and discussed.

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