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Parahydrogen Fraction in a Liquid Hydrogen target in the NPDGamma Experiment¹ CHAD GILLIS, Indiana University, NPDGAMMA COLLABORATION — The NPDGamma Experiment at SNS is measuring A_{γ} , the directional γ asymmetry in polarized cold neutron capture on parahydrogen, with a statistics-limited precision of 1×10^{-8} . One of the parameters that affect the measured asymmetry is the polarization of the neutron beam upon capture. The depolarization of a neutron beam of under 15 meV in liquid hydrogen arises due to the large spin flip scattering cross section of orthohydrogen. We have set up beam monitors before and after the hydrogen target to measure the relative transmissions of the target in the empty and full configurations. The extracted orthohydrogen concentration can be modeled to deduce a depolarization upon capture. I will present an upper bound estimate of the depolarization upon capture during the first run cycle that was recently completed.

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