

Abstract Submitted  
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**New measurements of longitudinal spin asymmetries in pion electroproduction** PETER BOSTED, College of William and Mary, CLAS COLLABORATION — We present new preliminary results for the longitudinal beam, target, and beam-target spin asymmetries in exclusive electro-production of charged and neutral pions. The measurements cover a wide range of four-momentum transfer squared (up to  $4 \text{ GeV}^2$ ), and invariant final mass  $W$  (up to  $2.4 \text{ GeV}$ ). The results come from two experiments using the CLAS instrument in Hall B at Jefferson Lab. The first experiment used 1.6, 2.4, 4.2, and 5.7 GeV longitudinally polarized electrons with scattering angles ranging from 10 to 45 degrees. The second experiment used 6 GeV electrons scattering at angles from 16 to 45 degrees. Both experiments used a longitudinally polarized  $\text{NH}_3$  target for  $\pi^+$  and  $\pi^0$  production from polarized protons, and an  $\text{ND}_3$  target for  $\pi^-$  production from polarized neutrons. The preliminary results indicate the possible presence of baryon resonance excitations at relatively high masses ( $W > 1.6 \text{ GeV}$ ). The status of a simple empirical fit to the results will be presented. It is hoped that the new results will be used in global unitary isobar fits in order to improve the knowledge of baryon resonance structure.

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