

## Contribution submission to the conference Bochum 2009

**Near-Threshold Pion Photoproduction at MAX-lab** — ●JASON BRUDVIK — for the MAX-Tagg Collaboration MAX-lab, Lund University, Sweden

Near-threshold pion photoproduction is an elementary process involving an explicit rearrangement of the quarks in the nucleon. It is thus a direct probe of the quark structure of the nucleon. At energies below the Delta resonance, pion photoproduction also provides a stringent test of chiral symmetry as a result of accurate predictions from chiral effective field theory. Precision sub-Delta measurements of the angular distribution and the total cross section for pion photoproduction are thus of fundamental importance. Surprisingly, aside from the  $\gamma p \rightarrow p\pi^0$  channel which has been thoroughly studied at MAMI-B and SAL, few data exist in this crucial near-threshold region. MAX-lab in Sweden is the one photonuclear facility worldwide whose energy range is perfectly tuned to such experiments. As such, a comprehensive program of near-threshold pion photoproduction experiments has recently been initiated. These experiments include measurements of the angular distribution for  $\pi^+$  photoproduction in the  $p$ -wave energy region for both the proton and heavier targets and the total cross section for  $\pi^-$  photoproduction close to threshold using a deuterium target. In this poster, an overview of the pion photoproduction program at MAX-lab will be presented. This overview will include preliminary results from commissioning runs for the previously mentioned experiments together with a look at future plans.

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