



Analysis of CCQE Neutrino Interactions in a Liquid Argon Time Projection Chamber (LArTPC)

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The Argon Neutrino Test, ArgoNeuT, is a small scale Liquid Argon Time Projection Chamber(LArTPC). ArgoNeuT, an R&D project paving the way for construction of larger detectors, was located 350 feet underground and ran upstream of the MINOS detector in the NuMI beam at Fermi National Accelerator Laboratory from September 2009 to February 2010. ArgoNeuT provides bubble-chamber-like quality images for excellent particle ID and background rejection. ArgoNeuT provides a sample of neutrino events in a LArTPC for the first time in the U.S. and the first time ever in a low-energy beam of 0.1 to 10 GeV. Analysis of ArgoNeuT's Charged Current Quasi-Elastic (CCQE) neutrino sample, in which a neutrino interacts with a neutron and the final state particles are a proton and a muon, will be presented. Vertex activity and calorimetric reconstruction will be addressed for this class of events.

Financial Support Justification for Early-Stage Researchers

I am a 5th year graduate student working on ArgoNeuT, a small scale Liquid Argon Time Projection Chamber (LArTPC). I am very excited at the prospect of attending ICHEP2012 as I am planning on presenting our newest results on CCQE interactions together with calorimetric reconstruction. Furthermore, this is going to be my first international conference of this scale and importance. This is an excellent opportunity to further develop my presentation skills and to interact with scientists from all over the world. Furthermore, this conference could also have a great impact on my career as I am currently conducting a post-doctoral search. Unfortunately, I do not have enough funding to cover the total cost of this conference. My attendance and additional support will depend on the amount that I receive from you. Thank you very much for your consideration.

Author: Ms PARTYKA, Kinga (Yale University)

Presenter: Ms PARTYKA, Kinga (Yale University)

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