

Abstract Submitted
for the TSS10 Meeting of
The American Physical Society

Improvements in LabVIEW Control of BiasDACs at ATRAP

MONICA LACY, CERN, ATRAP COLLABORATION¹ — The primary goal of the ATRAP project at CERN is the formation of antihydrogen atoms; as part of this process, positrons are cooled, controlled and focused by passage through a series of electromagnets, and introduced into a nested Penning-Ioffe trap, where some of them combine with antiprotons to form atoms of antihydrogen. Positron cooling is controlled by LabVIEW, a graphical programming application that allows interface with multiple sensors and power supplies that control and monitor the electromagnets. A major project undertaken at ATRAP this summer was the transfer of voltage control for ten of the electromagnets to individual biasDACs (digital-to-analog boards), ensuring that the accumulation process continues independently of LabVIEW and its possible timing delays. An overview of the LabVIEW-based communication protocol for biasDACs and the process of biasDAC programming, which is expected to increase positron-antiproton interactions at ATRAP, will be presented.

¹Research conducted under Dr. Joseph Borbely of York University.

Monica Lacy
University of Dallas

Date submitted: 12 Feb 2010

Electronic form version 1.4