

Abstract Submitted
for the DNP11 Meeting of
The American Physical Society

Conductance Control Iris for the K150 Cyclotron H- Ion Source¹

ARMANDO MALDONADO², HENRY CLARK, GABRIEL TABACARU, Cyclotron Institute A&M University — A multi-cusp H- ion source has been installed on the K150 cyclotron for the production of high intensity proton beams. These beams will be used to create secondary radioactive ions for the Upgrade Project [1]. One of the limiting factors in creating an intense beam comes from poor vacuum along the injection line caused by the ion source itself. A large flow of hydrogen gas is required to make the Hydrogen negative (H-) ions in the ion source. As a result, many of the hydrogen molecules exit the ion source and migrate into the injection line and deteriorate the vacuum. To reduce the flow of these molecules into the injection line, a computer controlled iris will be installed between the ion source and the injection line. With the iris set at the correct diameter, the vacuum in the injection line should improve the transport efficiency of the H- ions to the cyclotron inflector should increase. For the project we used an 8" OD Conflat DVM brand iris with an MDrive 17 Plus motor which will be controlled by a Labview software interface.

¹Funded by DOE and NSF-REU Program.

²REU Student from Angelo State University

Armando Maldonado
Cyclotron Institute A&M University

Date submitted: 03 Aug 2011

Electronic form version 1.4