

Abstract Submitted  
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**Remote control of a DC discharge experiment** ARTURO DOMINGUEZ, A. ZWICKER, PPPL, S.A. WISSEL, UCLA, J. ROSS, Shawnee State University — Glow discharges are an excellent tool to introduce plasmas to the general public, in part, because of their visual nature [1]. In this poster, we present recent developments of the Remote DC Discharge Experiment. This experiment consists of a 36" long x 3.5" radius glass tube containing air held at pressures of approximately 30-200mTorr with a variable voltage between the ends which can be set between 0-2000V to create a glow discharge. Surrounding the tube, a set of Helmholtz coils can be controlled to demonstrate the effects of axial magnetic fields on the plasma. While the experiment is located at PPPL, a webcam displays the experiment online. The parameters (voltage, magnetic field and pressure) can be controlled remotely in real-time by opening a URL which shows the streaming video, as well as a set of Labview controls. The interface has been designed to attract users with a wide range of academic backgrounds by presenting different levels of interactivity, including the most advanced level which gives the user the possibility of empirically finding the breakdown voltage as a function of pressure and electrode separation.

[1] S. A. Wissel, A. Zwicker, J. Ross, S. Gershman, "The Use of DC Glow Discharges as Undergraduate Educational Tools" AJP in press 2013

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