

Abstract Submitted
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Development of a new gas manifold system for ALEXIS¹ JOSEPH SENNE, ASHLEY EADON, EDWARD THOMAS, Auburn University — The Auburn Linear Experiment for Instability Studies (ALEXIS) is a device dedicated to the study of low frequency (ion cyclotron frequency) instabilities in plasmas. Originally, gas flows to the 180 cm long, 10 cm diameter device was done using tanks of helium and argon directly connected to ALEXIS. This configuration achieved its goal for inputting gas, yet required manually adjusting the valves on the input devices to control the flow rate of gas into the chamber. Thus, a more stable and remotely controlled method of delivering the gas is desirable. The new approach makes use of computer-controlled mass flow controllers to remotely supply and control the pressure of the ALEXIS device. This new system provides enhanced flexibility (e.g., allowing controlled mixtures of gases), improved safety (gas cylinders moved to a storage room), and a more rapid startup of plasma operations. This presentation discusses the design, construction, and initial operation of the remote gas system for ALEXIS.

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