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Initial operations of the ALEXIS device with a new, helicon-type rf source¹ A. EADON, E. TEJERO, E. THOMAS, M. CIANCIOSA, Auburn University — The Auburn Linear EXperiment for Instability Studies (ALEXIS) is a 170 cm long, 10 cm diameter linear magnetized plasma column. Previous investigations [E. Thomas, et al., Phys. Plasmas, 10, 1191 (2003)] on the ALEXIS device have focused on modifications of the radial electric field, which resulted in axial currents and flow shear driven electrostatic ion cyclotron instabilities. Upcoming experiments on the electromagnetic branch of these instabilities require operation under finite beta conditions and current-free plasma generation. To accomplish this, the original filament source was replaced with a helicon-type rf plasma source. This presentation will give initial measurements of the plasma parameters obtained with the rf source and will compare those parameters to those of the filament generated plasmas. Additionally, observations of the low frequency instabilities in the rf generated plasma will be presented.

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