Abstract Submitted
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Spectral Analysis Software for the Compact Toroid Injection Experiment[1] DONALD BELKNAP, Rice University — The Compact Toroid Injection Experiment (CTIX) operated by UC Davis functions by producing a spheromak-like plasma which is accelerated via a coaxial railgun. In order to examine features of the plasma such as impurities and temperature, the spectrum of the plasma is measured during a shot. Because of the number of shots that may be taken in a single day, a computer analysis program is an expedient method of analyzing the spectra. A graphic user interface (GUI) was designed to allow the user to easily read the spectral images from an archived data file and interactively perform functions such as CCD camera tilt correction, background subtraction, and wavelength calibration. The code for the GUI, background subtraction, wavelength calibration, and tilt correction algorithms are written in a high-level programming language, Igor, to allow for easy extension by CTIX scientists. The code can be extended to add features that can perform analysis on large numbers of spectra. Results of CTIX shots and calibration spectra will be presented.

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