

Abstract Submitted
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Determining Plasma Conditions from Experimental Spectral Data Using Pegasys NICOLAS PEREYRA, JOSEPH MACFARLANE, PAMELA WOODRUFF, IGOR GOLOVKIN, PING WANG, Prism Computational Sciences, Inc. — PEGASYS is a software tool used in the analyses of experimental spectra. Operating on an imported experimental spectrum, PEGASYS supports continuum background subtraction, wavelength calibration, and fitting to spectral lines. In addition, PEGASYS computes the best fit of an experimental spectrum to PrismSPECT results, thereby finding temperatures and densities most representative of the plasma. PrismSPECT is a collisional-radiative spectral analysis code designed to simulate the atomic and radiative properties of LTE and non-LTE plasmas spanning a wide range of conditions. For a grid of user-specified plasma conditions, PrismSPECT computes spectral properties (emission and absorption), ionization fractions, atomic level populations, atomic transition rates, and line intensities and ratios. In designing PEGASYS and PrismSPECT, a strong emphasis has been placed on ease of use. It features a user-friendly, graphical interface for setting up problems, monitoring the progress of simulations, and viewing results. Recent enhancements to PEGASYS, including line identification and curve fitting, will be discussed.

Nicolas Pereyra
Prism Computational Sciences, Inc.

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