

Abstract Submitted
for the DAMOP16 Meeting of
The American Physical Society

Current Status of Atomic Spectroscopy Databases at NIST

ALEXANDER KRAMIDA, YURI RALCHENKO, JOSEPH READER, National Institute of Standards and Technology — NIST's Atomic Spectroscopy Data Center maintains several online databases on atomic spectroscopy. These databases can be accessed via the <http://physics.nist.gov/PhysRefData> web page. Our main database, Atomic Spectra Database (ASD), recently upgraded to v. 5.3, now contains critically evaluated data for about 250,000 spectral lines and 109,000 energy levels of almost all elements in the periodic table. This new version has added several thousand spectral lines and energy levels of Sn II, Mo V, W VIII, and Th I-III. Most of these additions contain critically evaluated transition probabilities important for astrophysics, technology, and fusion research. A new feature of ASD is providing line-ratio data for diagnostics of electron temperature and density in plasmas. Saha-Boltzmann plots have been modified by adding an experimental feature allowing the user to specify a multi-element mixture. We continue regularly updating our bibliography databases, ensuring comprehensive coverage of current literature on atomic spectra for energy levels, spectral lines, transition rates, hyperfine structure, isotope shifts, Zeeman and Stark effects. Our other popular databases, such as the Handbook of Basic Atomic Spectroscopy Data, searchable atlases of spectra of Pt-Ne and Th-Ne lamps, and non-LTE plasma-kinetics code comparisons, continue to be maintained.

Alexander Kramida
National Institute of Standards and Technology

Date submitted: 03 Feb 2016

Electronic form version 1.4