

Abstract Submitted
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0.1 Critical compilation of experimental and theoretical data on 2s-2p transitions of Li-like ions

ALEXANDER KRAMIDA, VLADIMIR AZAROV, HARIS KUNARI, YURI RALCHENKO, National Institute of Standards and Technology — All available experimental data on the resonance lines of Li-like ions have been critically compiled. Systematic errors have been corrected in several sets of old measurements, a few outlying measurements have been excluded, and weighted means of all remaining experimental values have been found. Differences of these weighted experimental means from two sets of advanced quantum-mechanical calculations have been fitted with smooth functions of nuclear charge Z . From this fitting, accurate recommended data have been derived for all Z between 6 and 92. These recommended data significantly disagree with both theories. While the discrepancies for low Z (<18) and for high Z (>70) can be explained by deficiencies in theoretical treatment of inter-electron correlations and nuclear shapes, the discrepancies of a few sigma in the mid- Z range (20–30) are puzzling.

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