

Abstract Submitted  
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**Progress on variational calculation of Li<sup>1</sup>** LIMING WANG, ZONG-CHAO YAN, University of New Brunswick, G.W.F. DRAKE, University of Windsor — In the past 15 years, significant progress has been made in precision determinations [1] of spectroscopies of Li and Be<sup>+</sup> both theoretically and experimentally. The isotope-shift measurements for some important transition lines have allowed us to extract nuclear charge radii of various isotopes, provided that the corresponding theoretical calculations, including relativistic and QED corrections, can be performed to sufficiently high accuracy. In this paper, the state-of-the-art calculations for the nonrelativistic energies of low-lying states of Li will be presented [2], together with the improved values of leading relativistic and QED corrections.

[1] W. Nörtershäuser, et al., Phys. Rev. A **83**, 012516 (2011).

[2] L. M. Wang, Z.-C. Yan, H. X. Qiao, and G. W. F. Drake, Phys. Rev. A **85**, 052513 (2012).

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