

Abstract Submitted  
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**Ionization potentials of superheavy elements No, Lr, and Rf and their ions** MARIANNA SAFRONOVA, University of Delaware, VLADIMIR DZUBA, School of Physics, UNSW, Australia, ULYANA SAFRONOVA, University of Nevada, Reno, ALEXANDER KRAMIDA, National Institute of Standards and Technology, Gaithersburg — We predict ionization potentials of superheavy elements No, Lr, and Rf and their ions using a relativistic hybrid method that combines configuration interaction (CI) with the linearized coupled-cluster approach. We expect these values to be accurate to about 350 cm<sup>1</sup>. Extensive study of the completeness of the four-electron CI calculations for Hf and Rf was carried out. As a test of theoretical accuracy, we also calculated ionization potential of Yb, Lu, Hf, and their ions, which are homologues of the superheavy elements of this study. The test demonstrated that the CI+all-order method is capable of predicting ionization potentials of ions with 1 to 4 valence electron to a very good precision, which may be used to provide improved recommended data.

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