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Online portal for high-precision atomic physics data and computation MARIANNA SAFRONOVA, P. BARAKHSHAN, R. EIGENMANN, C. CHEUNG, University of Delaware, S.G PORSEV, University of Delaware and PNPI, Russia, M.G. KOZLOV, PNPI and "LETI", Russia, A. MARRS, University of Delaware — In a number of present applications, ranging from studies of fundamental interactions to development of future technologies, accurate atomic theory is indispensable to the design and interpretation of experiments, with direct experimental measurement of relevant parameters being impossible or infeasible. The goal of our project is to create an online portal for high-precision atomic physics data and computation that will provide a variety of services to address the needs of the widest possible community of users. The first version of the portal, demonstrated here, provides a wide range of transition matrix elements, static, and dynamic polarizabilities for a number of atoms and ions, including Li, Be^+, Na, Mg^+, K, Ca^+, Rb, Sr^+, Sr, Ba^+, Fr, Ra^+, and others. The data are calculated using a high-precision state-of-the-art coupled-cluster (CC) method or a hybrid method that combines configuration interaction and CC. All values include estimated uncertainties. Experimental values are also included with references where high-precision data are available. We seek community input to improve the portal and guide the next stages of the project which will include more complicated systems and capabilities to compute atomic properties on demand via portal.

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