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Absolute nuclear radii of Ir isotopes determined by EUV spectroscopy of highly charged Os and Ir ADAM HOSIER, Clemson University, FNU DIPTI, National Institute of Standards and Technology, Gaithersburg, ROSHANI SILWAL, Appalachian State University, ALAIN LAPIERRE, NSCL, Michigan State University, STEVE BLUNDELL, University of Grenoble Alps, CEA, SAMUEL SANDERS, YANG YANG, Clemson University, PAUL SZYPRYT, National Institute of Standards and Technology, Boulder, JOSEPH TAN, AUNG NAING, National Institute of Standards and Technology, Gaithersburg, JOHN GILLASPY, National Science Foundation, JOAN DREILING, National Institute of Standards and Technology, Gaithersburg, GERALD GWINNER, University of Manitoba, ANTONIO VILLARI, Facility for Rare Isotope Beams, Michigan State University, YURI RALCHENKO, National Institute of Standards and Technology, Gaithersburg, ENDRE TAKACS, Clemson University — The absolute nuclear radius of iridium isotopes can be determined and improved through the relative nuclear radii difference between osmium and iridium using a novel approach in intensive, high statistics EUV spectroscopy. The electron beam ion trap (EBIT) at NIST was used to produce highly charged ions of Os and Ir with a beam energy of about 18 keV. The spectra from electron impact excitations were recorded over a range of 4.05 nm to 19.95 nm with a flat-field grazing EUV CCD spectrometer with a pixel resolution of about 0.005 nm. Observed transitions were Na-like 3s – $3p_{1/2}$ and the Mg-like $3s^2$ – $3p_{1/2}$ of both Os and Ir. The shifts in the wavelength between the corresponding Ir and Os transitions were measured continuously over the course of several days by cycling the injection of Os, Ir, and Ne (used for calibration) into the EBIT. The wavelength shifts measured with our experimental accuracy are directly related to with the difference of the mean square radii through the expansion of the nuclear Seltzer moment. Calculation of necessary nuclear parameters were performed by GRASP2K [and RMBPT packages.

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