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Inner-Shell Photodetachment Thresholds of Transition Metal Negative Ions ILEANA DUMITRIU, Western Michigan University, Kalamazoo, MI 49008, R.C. BILODEAU, LBNL, ALS, CA 94720, T.W. GORCZYCA, Western Michigan University, Kalamazoo, MI 49008, C.W. WALTER, N.D. GIBSON, Dept. of Physics, Denison University, Granville, OH 43023, A. AGUILAR, LBNL, ALS, CA 94720, Z. PESIC, D. ROLLES, N. BERRAH, Western Michigan University, Kalamazoo, MI 49008 — Inner-shell photodetachment threshold studies of transition metal negative ions in Fe- and Ru- have been conducted using the merged ion-photon beam technique at the Advanced Light Source beamline 10.0.1. The ions extracted from the SNICS source were mass selected and merged collinearly with the photon beam. Inner-shell photodetachment and subsequent Auger decay produce positive ions which are detected as a function of photon energy. Excitations from p-electrons to open d-shells were carried out in Fe- and Ru-. Our measurements revealed for the first time a d-wave Wigner law in single-photon measurements of negative ions. This work is funded by DOE, office of Science, BES, Chemical Sciences, Geosciences and Biosciences Divisions. NDG and CWW acknowledge support from NSF grant No.0456916 and 0757976.

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