

Abstract Submitted
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Inner-Shell Photodetachment of the Carbon Anions Chain RENE BILODEAU, Univ of Connecticut - Storrs, DAN GIBSON, WES WALTER, Physics department, Denison University, ILEANA DUMITRIU, Physics department, Hobart and William Smith Colleges, ALEJANDRO AGUILAR, ReVera Inc, DAVID MACALUSO, Physics and Astronomy Department, Montana State University, NORA BERRAH, Univ of Connecticut - Storrs — We have carried out inner-valence and K-shell photodetachment experiments at the Advanced Light Source (LBNL) in stable homonuclear anions C_n^- ($n=2-12$) produced with a SNICS ion source. These measurements will be used to determine absolute cross sections and characterize the mechanisms that lead to different decay patterns such as nuclear dynamics resulting from photodissociation. The data will be compared to our previous K-shell photoionization data of atomic C^- which revealed a shape resonance near 285 eV, in good agreement with an R-matrix calculation. We will also present the branching ratios between the decay pathways as a function of cluster size to understand size dependent dynamical processes. This work is funded by the Department of Energy, Office of Science, Basic Energy Sciences, Division of Chemical Sciences, Geosciences and Biosciences under grant N. DE-FG02-92ER14299.A002 and in part by the National Science Foundation under Grant No. 1404109.

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