

Abstract Submitted  
for the TSS10 Meeting of  
The American Physical Society

**Inner-shell photodetachment of  $C_{60}^{-1}$**  R.C. BILODEAU, N. BERRAH, Western Michigan U., Kalamazoo, S. SCHIPPERS, A. MULLER, Justus-Liebig-Universitat, Giessen, D.A. ESTEVES, R.A. PHANEUF, U. of Nevada, Reno, N.D. GIBSON, C.W. WALTER, Denison U., Granville, A. AGUILAR, LBNL-ALS, Berkeley — First photodetachment spectroscopy on negative ions of  $C_{60}$  has been conducted, using the merged ion-photon beam apparatus at the ALS with photon energies from 20eV up to 320eV. Multiple electron ejection was substantial at all photon energies, allowing product charge states up to 3+ to be measured. Fragmentation into cations of  $C_{58}$ , and  $C_{56}$ , was also studied. The relative strengths of the 7 observed product channels and absolute cross sections were measured at selected energies in this range. We find some structure that differs significantly from previous results in photoionization experiments on  $C_{60}$  cations [S.W. J. Scully *et al.*, Phys. Rev. Lett. **94**, 065503 (2005)].

<sup>1</sup>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. 0757976. AM and SS acknowledge support from Deutsche Forschungsgemeinschaft.

Rene C. Bilodeau  
Western Michigan U.

Date submitted: 22 Jan 2010

Electronic form version 1.4