

Abstract Submitted
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Photoionization of Fullerene Ions of Various Mass in the Energy Range of the Giant Plasmon Excitations DAVID ESTEVES, University of Nevada, Reno and the Advanced Light Source, RON PHANEUF, University of Nevada, Reno, ALEX AGUILAR, A.L. DAVID KILCOYNE, The Advanced Light Source, ALFRED MUELLER, STEFAN SCHIPPERS, Justus-Liebig-University Giessen, CARMEN CISNEROS, Universidad Nacional Autónoma de México, MUSTAPHA HABIBI, KIRAN BARAL, NAGENDRA ARYAL, University of Nevada, Reno — A systematic study of single photoionization of fullerene ions was conducted at ALS to examine the dependence of the cross sections on fullerene mass. Present single ionization measurements of C_{40}^+ , C_{50}^+ , C_{60}^+ , and C_{70}^+ are combined with previous measurements for C_{80}^+ and C_{84}^+ to examine the mass-dependent behavior of the giant plasmon resonances in the 18 eV to 72 eV energy range. Both the surface plasmon and volume plasmon resonances are identified and compared to determine whether simple scaling relations may be used to predict the behavior of other fullerenes. Initial analysis indicates a correlation between fullerene ion mass and the location and strength of these plasmon resonances.

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