

Abstract Submitted  
for the MAR06 Meeting of  
The American Physical Society

**A comparison of the electronic structure and optical plasmons in  $Cs_x$  clusters,  $Cs_x$  shells and  $C_{60}$  coated with a  $Cs_x$  shell<sup>1</sup>** ARNE ROSEN, JENS EKENGREN, JOHAN SJOEHOLM, MATS ANDERSSON, DANIEL OESTLING, Department of Physics, Goteborg University, SE-412 96, Goteborg, Sweden, DAVID TOMANEK, Department of Physics and Astronomy, Michigan State University, East Lansing, Michigan 48824-2230, USA — We present calculations of the electronic structure and collective excitations in Cs clusters, Cs shells and  $C_{60}$  coated with a shell of Cs atoms. The ground state properties of these systems are described using the Local Density Approximation and the electronic excitations by the Random Phase Approximation. The jellium shell approximation underlying our calculations correctly predicts the magic numbers. The optical excitation spectra in Cs clusters and Cs coated  $C_{60}$  are found to be in agreement with available experimental data.

<sup>1</sup>Project funded by Swedish Research Council, Swedish Foundation for Strategic Research, NSF NIRT grants DMR-0103587, ECS-0506309, NSF-NSEC EEC-425826

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Date submitted: 30 Nov 2005

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