

ABSTRACT

COOPERATIVE AND COLLECTIVE DYNAMICS INDUCED BY HIGH FREQUENCY PHOTONS

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Collective dipole resonance frequencies in extended but finite systems depend on the density of bound valence electrons. Typical values range from a few eV for metal clusters to about 20 eV for the giant dipole resonance in C_{60} . Recent synchrotron experiments have revealed another collective resonance at about 40 eV whose nature will be discussed along with possible generalizations at higher frequencies. In the second part of the talk I will discuss an explorative study regarding effects of cooperative dynamics in small argon clusters following innershell ionization by a strong laser pulse at a frequency of 350 eV and 500 eV.