

## Continuing Influence of Shell Effects in the Nuclear Quasi-Continuum

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The nuclear dipole polarizability - a second order effect - governed by dynamics of giant dipole resonances was investigated. Along with the resulting effects of recently observed enhancement of photon strength functions at low energies for nuclide in  $A \approx 50, 90$  mass region. Empirical drops observed in ground-state nuclear polarizabilities indicate deviations from the effect of giant dipole resonances and reveal the presence of shell effects in semi-magic nuclei with neutron magic numbers  $N = 50, 82$  and  $126$ . Similar drops of polarizability in the quasi-continuum of nuclei with, or close to, magic numbers  $N = 28, 50$  and  $82$ , reflect the continuing influence of shell closures up to the nucleon separation energy. These findings strongly support recent large-scale shell-model calculations in the quasi-continuum region describing the origin of the low-energy enhancement of the radiative or photon strength function as induced paramagnetism, and assert the Brink-Axel hypothesis as more universal than originally expected.

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