Contribution ID: **45** Type: **not specified**

# How atomic nuclei polarize

*Monday 4 February 2019 11:10 (30 minutes)*

Empirical drops in ground-state nuclear polarizabilities indicate deviations from the effect of giant dipole resonances and may 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, could 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, which describe the origin of the low-energy enhancement of the photon strength function as induced paramagnetism, and assert the generalized Brink-Axel hypothesis as more universal than originally expected.

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**Session Classification:** Plenary Session V