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Electric, Magnetic and Spin-Dependent Dynamical Polarizabilities of Hadrons

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Compton scattering offers a unique opportunity to study the dynamical structure of hadrons over a wide kinematic range, with polarizabilities characterizing the hadron's active internal degrees of freedom.

We present calculations and detailed analysis of electric and magnetic and the spin-dependent dynamical polarizabilities for the lowest in mass SU(3) octet of baryons.

These extensive calculations are made possible by the recent implementation of semi-automatized calculations in chiral perturbation theory which allows evaluating polarizabilities from Compton scattering up to next-to-the-leading order. The dependences for the range of photon energies covering the majority of the meson photoproduction channels are analyzed.

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