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The proton polarizability project at A2-MAMI

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Nucleon polarisabilities are fundamental structure observables, like mass or charge, which are sensitive to the internal quark dynamics of the nucleon. Polarised Compton scattering off the proton can be used to study the polarisabilities of the proton, thus probing the internal structure of the proton. Scalar terms quanitify the response of the proton's structure to an applied electromagnetic field, while spin dependent terms similarly quantify the response of the proton's spin. The leading order scalar polarisabilities are denoted by αE1 and βM1, while the leading order spin polarisabilities are denoted by ¯γE1E1, ¯γM1M1, ¯γE1M2, and ¯γM1E2. An experimental program, using polarised Compton scattering with the Crystal Ball experiment at MAMI, will be discussed. Recent results will be presented.

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