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Hard Exclusive Processes and GPDs

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Applications of perturbative QCD to deeply virtual Compton scattering and hard exclusive electroproduction processes require a generalization of the usual parton distributions for the case when long-distance information is accumulated in nondiagonal matrix elements of quark and gluon light-cone operators. I describe two types of generalized parton distributions, nonperturbative functions parametrizing such matrix elements: double distributions and off-forward parton distributions. I discuss their general properties, relation to the usual parton densities and form factors, evolution equations for both types of generalized parton distributions (GPD), models for GPDs, their applications in virtual and real Compton scattering, and recent achievements in the studies of GPDs.