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Probing Short Range Nuclear Properties in Photodisintegration of Few-Nucleon Systems¹

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High momentum transfer photodisintegration reactions involving few-nucleon systems represent a powerful tools for studying the nuclear dynamics at short space-time separations. We review on several aspects of this research, such us understanding the nature of short range three nucleon correlations, studying the mechanism of three-nucleon forces and probing the dynamics of quark-hadron transition in the nuclear medium. Particular processes we review are the high Q^2 three-body break up reactions, 90° center of mass photodisintegration of pp and pn pairs in the 3He as well as production of energetic deuterons in the current fragmentation region of the reaction. We demonstrate how these studies could allow us to extract unique information about properties of strong interaction which are inaccessible in studies of nucleon-nucleon scattering.

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