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Abstract for an Invited Paper for the DNP19 Meeting of the American Physical Society

Short Range Correlations in Nuclei and in Nucleons

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We discuss the phenomenon of short range correlations (SRCs) in strongly interacting Fermi systems, considering the SRCs of nucleons in the nucleus and SRCs of quarks in the nucleon. We demonstrate how the SRC approach allows to introduce a new theoretical framework for calculation of the high momentum component of bound state wave functions of both nuclei and nucleons. We review how the several properties of multi-nucleon SRCs predicted in theory have been confirmed in recent experiments as well as discuss properties of multi-patron correlations in the nucleon and prospects of their experimental studies. The talk will address also the relevance of SRC studies to the advance of our understanding of the structure of cold-dense nuclear matter.