

# Short Range Correlations in Nuclei – Progress and Prospects

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Short-range correlations (SRCs) in nuclei [1], an area of longstanding study both theoretically and experimentally, are an aspect of nuclear structure that goes beyond the independent particle model. Short distance interactions between nucleons give rise to high momentum components common to all nuclei and arise from both the repulsive core of the NN potential and from tensor interactions. In recent years, a series of scattering experiments have provided a wealth of information about the strength of SRCs via cross section ratios of heavy to light nuclei in  $A(e, e')$  and about their isospin dependence from  $A(e, e'NN)$ . In addition, a remarkable relationship has been observed between the strength of SRCs determined in quasielastic electron-nucleon kinematics and the size of the EMC effect in deep inelastic kinematics where scattering from quarks are predominant. I will provide the background to the topic, the experimental evidence for the existence of SRCs in nuclei and details on their connection to the EMC effect. I will finish with a brief survey of future experiments.

## References

- [1] A.N. Antonov, P.E. Hodgson and I.Zh. Petrov, “Nucleon Correlations in Nuclei”, Springer-Verlag, (1993)