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## The Transparent Nucleus: Unperturbed inverse kinematics nucleon knockout measurements with a 48 GeV/c carbon beam

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Measuring ground-state distributions of nucleons in atomic nuclei is a formidable challenge in nuclear physics, often met by particle knockout reactions. In this talk I present results from a new fully exclusive proton-knockout measurement in inverse kinematics at high energy that overcomes limitations posed by initial and final state interactions (ISI/FSI). The experiment was carried out at the JINR (Russia), where a  $^{12}\text{C}$  beam at 48 GeV/c impinged on a liquid hydrogen target, the reaction products were measured with the BM@N detector setup, using in particular a proton spectrometer and charged particle tracking system. By missing momentum reconstruction, quasi-elastic pp scattering at large angles is identified, while the selection of the heavy fragment suppresses FSI. It is shown that this kind of  $^{12}\text{C}(p, 2p)^{11}\text{B}$  reaction probes single nucleon properties in a single-step knockout reaction, being in agreement with theoretical calculations. We probe Short-Range Correlations (SRC) in the same way by the breakup of SRC pairs in  $^{12}\text{C}(p, 2pN)^{10}\text{B}/^{10}\text{Be}$  reactions. We not only identify SRCs in such kinematical conditions for the first time but also deduce factorization and other pair properties from direct measurements.

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