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Bose–Einstein correlations in hadron-pairs from lepto-production on nuclei ranging from hydrogen to xenon

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Bose–Einstein correlations of like-sign charged hadrons produced in deep-inelastic electron and positron scattering are studied in the HERMES experiment using nuclear targets of 1H, 2H, 3He, 4He, N, Ne, Kr, and Xe. A Gaussian approach is used to parametrize a two-particle correlation function determined from events with at least two charged hadrons of the same sign charge. This correlation function is compared to two different empirical distributions that do not include the Bose–Einstein correlations. Clear signals of Bose–Einstein correlations for all target nuclei without a significant variation with the nuclear target mass are found. Also, no evidence for a dependence on the invariant mass W of the photon-nucleon system is found when the results are compared to those of previous experiments.

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