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Two-body correlations in ultra-relativistic nuclear collisions within a generic string model with wounded quarks

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While string models describe initial state radiation in ultra-relativistic nuclear collisions suitably well, they mainly differ among each other in the presumed end-point positions of the strings in spatial rapidity. We present a generic model where wounded quarks are amended with strings whose both end-point positions fluctuate and analyze semi-analytically various scenarios of string-end-point fluctuations.
In particular we constrain the different cases to experimental data on rapidity spectra from collisions at $\sqrt{s_{\rm NN}} = 200$ GeV, and explore their respective two-body correlations. We find that the popular measures used to quantify the longitudinal fluctuations are limited with upper and lower bounds and assume close values for the most likely models of the end-point distributions, which may explain why various approaches yield here very similar results.

Authors: ROHRMOSER, Martin (Jan Kochanowski University Kielce); BRONIOWSKI, Wojciech (IFJ PAN)

Presenter: ROHRMOSER, Martin (Jan Kochanowski University Kielce)