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Forward-backward correlations between event-by-event average transverse momenta in Pb-Pb collisions with ALICE

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Forward-backward (FB) correlations are considered to be a powerful tool for the exploration of the early dynamics of hadronic interactions. The FB correlation functions can be constructed from different observables calculated event-by-event in two separated pseudorapidity regions. We report a measurement of the event-by-event average transverse momentum correlation for charged particles in two separated pseudorapidity regions in Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ and 5.02 TeV recorded with ALICE at the LHC. The event-by-event average transverse momenta correlations are robust against volume fluctuations and thus the centrality determination methods, which provides higher sensitivity to the properties of the initial state and evolution of the medium created in AA collisions. The strength of the FB correlation is calculated for different centralities of the Pb-Pb collisions. Results are compared to Monte Carlo event generators, such as HIJING and AMPT.

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