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Diffusion phenomenon of electric charge and fluctuation observed at ALICE

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We investigate the effects of the global charge conservation on the rapidity window dependences of fluctuations of conserved charges observed in heavy ion collisions by solving the diffusion master equation with boundaries. Our result suggests that the effects of the global charge conservation for the diffusion in the hadronic phase is negligible in the experimental results even with the largest rapidity window acceptance at ALICE. The rapidity window dependences of the fluctuations of conserved charges contain various information on the matter generated in heavy ion collisions such as diffusion constant in the hadronic phase.

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