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Transverse momentum distributions in low-mass Drell-Yan lepton pair production at NNLO QCD

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The production of lepton pairs at low invariant mass and finite transverse momentum resolves QCD dynamics at the boundary between the perturbative and non-perturbative domains. We investigate the impact of NNLO QCD corrections for the lepton pair transverse momentum distributions at energies corresponding to the BNL RHIC collider and to fixed-target experiments. Satisfactory perturbative convergence is observed in both cases. Only the collider data are found to be well-described by perturbative QCD.

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