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On the anomalous t-quark charge asymmetry and noncontractibility of the physical space

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Heavy flavour production at hadron colliders represents a very promising field to test perturbative QCD. The integrated forward-backward asymmetry of the top-antitop quark production is particularly sensitive to any deviation from the standard QCD calculations. The two Tevatron collaborations, CDF and D0, reported a much larger t-quark charge asymmetry than predicted by the theory. We show that the QCD in noncontractible space, where the minimal distance is fixed by weak interactions, enhances the asymmetry by more than a factor of 3 (5) at the parton level in leading order of the coupling for the Tevatron (LHC) center of mass energies. This result should not be a surprise since the asymmetry observable directly explores the far ultraviolet sector of the spacelike domain of the Minkowski spacetime.

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