

Abstract Submitted  
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**NLO QED Contributions to Top Quark Pair Production** JIA ZHOU, Department of Physics, State University of New York at Buffalo, Buffalo, NY, USA, ANDREAS SCHARF, Institute for Theoretical Physics and Astrophysics, University of Würzburg, Würzburg, Germany, DOREEN WACKEROTH, Department of Physics, State University of New York at Buffalo, Buffalo, NY, USA — Top quark pairs are produced via quark-antiquark annihilation  $q\bar{q} \rightarrow t\bar{t}$  and gluon-gluon fusion  $gg \rightarrow t\bar{t}$  and decay rapidly through electroweak interaction  $t \rightarrow Wb$  with a branching fraction of 99% in the Standard Model(SM). That the measured forward-backward asymmetry of top-pair production at the Tevatron deviates from that predicted in the SM is intriguing in view of searching for the presence of possible new physics. We here consider  $\mathcal{O}(\alpha_s^2\alpha)$  contributions in the QED sector to top-pair production. Results are given for the observable hadronic cross section at the Tevatron and the LHC.

Jia Zhou  
Department of Physics, State University of New York  
at Buffalo, Buffalo, NY, USA

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