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SUSY Effects in $t\bar{t}$ Production in the CP-Violating MSSM at the LHC ALEXANDER MORENO BRICENO, University at Buffalo, The State University of New York and Universidad Antonio Narino, STEFAN BERGE, Johannes Gutenberg-Universitaet, MARGARETE MUEHLLEITNER, Karlsruhe Institute of Technology (KIT), DOREEN WACKEROTH, University at Buffalo, The State University of New York, MARTIN WIEBUSCH, Karlsruhe Institute of Technology (KIT) — We investigate possible CP violating effects due to one loop MSSM corrections to top-quark pair production at the LHC. We include supersymmetric QCD as well as supersymmetric electroweak contributions to the top-quark pair production mechanisms, namely quark-antiquark annihilation, $q\bar{q} \to t\bar{t}$, and gluon-gluon fusion, $gg \to t\bar{t}$. At the level of the top quarks, we study in detail spin-spin correlating observables that are sensitive to CP violating phases of the complex MSSM.

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