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QCD physics in the Future Super Tau-Charm Facility

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The proposed super tau-charm facility (STCF) is a symmetric electron-positron collider, designed to provide e^+e^- interactions at a center-of-mass energy from 2.0 to 7.0 GeV. This energy region corresponds to the transitions between non-perturbative quantum chromodynamics (QCD) and perturbative QCD. Hence, a large variety of topics in elementary particle physics can be pursued at STCF, including exploring QCD and hadron spectroscopy, precisely measurement of electroweak interactions and flavor physics as well as searching for the new physics beyond the standard model. The peaking luminosity at STCF is designed to be at least 0.5×10^{35} cm$^{-2}s^{-1}$ and is expected to deliver more than 1 ab^{-1} of integrated luminosity per year. In this talk, the physics potentials will be introduced, especially the QCD studies on fragmentation functions, form-factors and hadron spectroscopy.

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