

## Experimental Program for Super Tau-Charm Facility

*Friday, October 1, 2021 8:00 AM (25 minutes)*

The proposed STCF is a symmetric electron-positron beam collider designed to provide  $e^+e^-$  interactions at center of-mass energies from 2.0 to 7.0 GeV. The peaking luminosity is expected to be  $0.5 \times 10^{35} \text{ cm}^{-2}\text{s}^{-1}$ . The energy region of STCF covers the pair production thresholds for tau-leptons, charmed meson & baryons, and all of the strange hyperons. STCF is expected to deliver more than  $1 \text{ ab}^{-1}$  of integrated luminosity per year. Huge samples of XYZ,  $J/\psi$ ,  $D^+$ ,  $D^+s$  and  $\Lambda_{cb}$  decays could be used to make precision measurements of the properties of XYZ particles, search for new ones, and study their rare decays; map out the spectroscopies of QCD hybrids; search for new sources of CP violation in the strange-hyperon and tau-lepton sectors with unprecedented sensitivity; make precise independent measurements of the unitarity of the CKM flavor-mixing matrix and address the Cabibbo Angle Anomaly; search for anomalous decays with sensitivities extending down to the level of SM-model expectations; qualify Lattice QCD calculations; and provide precise inputs that are essential for the interpretation of results from other experiments.

### What is your topic?

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**Session Classification:** Session 7: Future directions

**Track Classification:** Tau2021 Abstracts