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# M3Or1A-05: Development of the CCT superconducting magnets for the STCF interaction region

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In older to explore charm physics and tau physics in next decades, a third-generation circular electron-positron collider Super Tau-Charm Facility (STCF) with the energy range of 2-7 GeV is being developed and pre-studied in University of Science and Technology of China. As the last correction of the particles before the collision, the superconducting magnets in the interaction region (IR) play an important role in the whole device. The distance between the interaction point (IP) and first IR magnet (called QD0) is 900mm and the collision angle of IR magnet is only 60 mrad. The effective thickness of the QD0 magnet is very limited. The QD0 magnet need 50 T/m at the reference radius of 10 mm. The pre-design of the CCT QD0 magnets will be proposed in this study.This high order harmonics and cross-talk of the of the twin aperture CCT magnet will be studied and analyzed. The optimization method of the twin aperture CCT magnet will be proposed. Some ideas of CCT magnet and its analysis will be also introduced in this study.

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