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Design of a hybrid seven-bend-achromat-based lattice for a super tau charm facility

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Super Tau Charm Facility (STCF) proposed in China, is a future electron-positron collider project with symmetric double ring. It's designed to be operated in the center of mass energy (CME) range between 2 GeV and 7 GeV. The goal luminosity is beyond $0.5 \times 10^{35} cm^{-2} s^{-1}$. Hybrid multi-bend-achromat (HMBA) concept, proposed to develop low emittance lattices with large dynamic aperture, has been adopted in some diffraction-limited storage ring (DLSR) designs. In this paper, we will show a lattice with hybrid 7BA arc for STCF. On the basis of last published lattice version, we optimize the interaction region, arc as well as technique region, add the damping wigglers and construct the geometry of double-ring.

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Footnotes

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Yes

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