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Tue-Mo-Or7-04: High Field Magnet Program for Accelerators in China: Status and Plan for Future

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High field superconducting magnet technology is the key to the success of the high energy particle accelerators. China is pursuing high field magnet R&D for future particle colliders like the Super Proton Proton Collider (SPPC). SPPC will need thousands of high field (12-20 T) superconducting magnets in around 20 years. A long term R&D roadmap of the advanced superconducting materials and high field magnets has been made, aiming to push the technology frontier to the desired level, and a strong domestic collaboration is established, which brings together expertise of Chinese superconductivity community from fields of physics, materials, technology and application. In the past years model magnets with hybrid coils (NbTi, Nb3Sn and iron-based superconductors) have been developed and tested: a model dipole reached >10T main field in the two apertures at 4.2K, the 1st iron based superconducting coil in the world was successfully tested at 24T background field, and dipole magnets with CCT configuration for HL-LHC is under development. An overview of the high field magnet program: R&D status and the future plans will be presented.

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