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### **Superconducting Magnet Technology for Future High Energy Proton Colliders<sup>1</sup>**

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Interest in high field dipoles has been given a boost by new proposals to build a high-energy proton-proton collider to follow the LHC and programs around the world are taking on the task to answer the need. Studies aiming toward future high-energy proton-proton colliders at the 100 TeV scale are now being organized. The LHC and current cost models are based on technology close to four decades old and point to a broad optimum of operation using dipoles with fields between 5 and 12T when site constraints, either geographical or political, are not a factor. Site geography constraints that limit the ring circumference can drive the required dipole field up to 20T, which is more than a factor of two beyond state-of-the-art. After a brief review of current progress, the talk will describe the challenges facing future development and present a roadmap for moving high field accelerator magnet technology forward.

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