

HTS for the Muon Collider - Challenges and Perspective

Luca Bottura

CERN, Switzerland

E-mail: luca.bottura@cern.ch

Abstract—HTS is a game changer for many applications of superconductivity, not last particle accelerators and detectors. This talk relates the potential of HTS, and in particular REBCO coated conductors, to the needs and evolution of superconducting magnets for accelerators. HTS already have a spectacular current carrying ability at high field, demonstrated and available on relevant lengths. The main perceived challenges are rather associated with magnet mechanics and quench management. HTS may offer solutions to both, relying on innovative winding technology. Furthermore, the extended range of operating temperature of HTS will benefit energy efficiency and sustainability. This potential is of very high interest towards sustainable large scale research infrastructures such as particle accelerators.

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