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[324] Quench Protection of CCT-type High-field Magnets for Accelerators

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The Canted-Cosine-Theta (CCT) type magnet has been proposed for Future Circular Collider (FCC) design. Its unique geometry lowers the coil stress intrinsically. Nevertheless, the former itself is also a barrier for heat to quickly propagate in case of a quench. To succeed in the magnet design and construction, further investigation is required on its electrothermal behavior. The potential detection & protection concepts are studied in both aspects of multiphysics simulations and experiments. The results will allow us to validate the conceptual design and feasibility of the construction of a fast and efficient quench protection system of CCT-type magnets for accelerators.

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