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Thu-Mo-Po4.07-06 [51]: Maximising the trapped field of HTS ring magnets

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High-temperature Superconducting tapes with high critical currents have shown a potential to be used as high-field magnets. HTS ring magnets have been proposed to use as a trapped field magnet with persistent current flowing in them after magnetization. The advantage over conventional HTS bulks is that the HTS ring magnet can be flexible in size and easy to build. This work focuses on optimizing the HTS ring magnet design and maximizing its trapped field. Several ring magnets have been made and magnetized using zero-field cooling at 20-30 K. We report the experimental measurements for the persistent currents in these ring magnets, as well as their decay. 2D H formulation has been used to calculate the trapped fields of the ring magnets and compared to experimental results.

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