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## REBCO sample testing at high power X-band

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SRF materials such as niobium have been extremely useful for accelerator technology but require low temperatures operation  $< 9$  K. The development of high temperature superconductors (HTS) is promising due to their high critical temperature 89.5 K. This work intends to determine the high-power RF performance of such materials at X-band (11.424 GHz). Two kinds of REBCO coatings (thin film deposition and soldered tapes) on a copper substrate were tested. Testing was done in a hemispherical TE mode cavity due to its ability to maximize the magnetic field on the sample and minimize the electric field. We will report conductivity vs temperature at low and high power. We determine the quench field in the REBCO sample and explain the evidence which shows that the quenching is most likely due to reaching the critical current and not due to average applied heat load for powers up to 1.6 kW.

### Footnotes

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### Region represented

North America

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