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Conduction Cooling Studies for 2.6 GHz Nb3Sn SRF Cavities

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A new frontier in SRF research is the use of simplified cooling methods
that will allow easier access to SRF technology for industrial applications.
At Cornell, we have developed a new conduction cooling setup that utilizes
a manufactured cryocooler to provide the necessary heat dissipation for
operation of a 2.6 GHz Nb_3Sn-coated SRF cavity. We report on various methods used to increase performance during testing, resulting in successful stable operation at 10 MV/m with a quality factor of 4E9. We also describe recent changes to the testing assembly used to minimize ambient magnetic fields and improve RF power delivery to the cavity.

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