

## **ANALYSES OF DEFECTS IN THE HEAT AFFECTED ZONE OF WELDED NIOBIUM COUPONS**

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### *Abstract*

Combined temperature mapping and optical inspection of SRF cavities has revealed defects near the edge of the heat affected zone (HAZ) of numerous welds. We have re-created similar defects on welded coupons that were electropolished in the lab and characterized by a variety of tools. Several features that may have bearing on the origin of these defects are discussed, such as their location relative to grain boundaries, the strain state of the niobium prior to welding and etching, the electropolishing parameters, and so forth. Since coupons are useful for distribution to academic researchers, we also describe other detailed characterizations.

**CONTRIBUTION NOT  
RECEIVED**