Nb3Sn Cavity Performance Recovery Using a Recoating Procedure

1. Introduction
   1. Performance degradation in Nb3Sn cavities due to “cracking”
      1. Room-temperature tuning
      2. Stresses during transportation or assembly
   2. The first cavity successfully healed after degradation.
2. Experiment
   1. Initial coating
   2. Degradation during transport
   3. Recoating procedure
3. Results
   1. VTS results from initial coating, degraded, and recoated states.

A graph with green lines and black text

Description automatically generated

* 1. Temperature maps
  2. Changes in cavity frequency

A graph with blue squares

Description automatically generated

1. Discussion
   1. Recoating recovers a significant portion of the original performance.
   2. Anomalous Q switching phenomenon.
   3. Relation to performance improvements seen in mechanically polished cavities.
   4. Another processing procedure for Nb3Sn cavities.