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Status of High-Power Testing of X-band Parallel Feed Nb Accelerating Structures

Monday 19 September 2022 17:00 (30 minutes)

This talk will present the status for developing high gradient X-band bulk niobium accelerating cavities. We optimized the cavity design to maximize the shunt impedance and reduce the peak surface magnetic fields. This means that a much higher gradient can be produced for the same quench field limit of niobium (230 mT), increasing the power loss to gradient² ratio > 100 [mWm/(MV)²]. We provide an update on the status of testing X-band superconducting high gradient structures, in conjunction with our ongoing material science testing at cryogenic temperatures to develop accelerating structures and other high power rf components.

Topic

Experiments and Diagnostics

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