



## **High-gradient X-band RF technology for CLIC and beyond**

*Saturday, August 6, 2016 6:00 PM (2 hours)*

The Compact Linear Collider (CLIC) project is exploring the possibility of constructing a multi-TeV linear electron-positron collider for high-energy frontier physics studies beyond the LHC era. The CLIC concept is based on high-gradient normal-conducting accelerating structures operating at X-band (12 GHz) frequency. We present the status of development, prototyping and testing of structures for operating at gradients of 100 MV/m and beyond. We report on high-power tests of these structures using test facilities at CERN and KEK, and their performance with and without beam loading as measured in tests at the CLIC Test Facility, CTF3. We report the progress in understanding the behavior of metal surfaces under high fields, modelling vacuum breakdown and the current understanding of high-gradient performance limitations. We summarise developments for application of the X-band technology to more compact accelerators for use eg. as X-ray FELs and in medicine.

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