Contribution ID: **10** Type: **oral**

Dark and Breakdown Currents Studies with RF and In-SEM Field Emission Studies.

Monday, 20 March 2017 15:00 (30 minutes)

A spectrometer for detection of the dark and breakdown currents during conditioning of new accelerating structures for CLIC, is operated at one of the 12 GHz stand-alone test-stands at CERN. The spectrometer consists of a dipole magnet, a variable collimator, and a fluorescent screen read out by a fast camera.
Built for high repetition rate operation it can measure the spatial and energy distributions of the electrons emitted from the acceleration structure during a single RF pulse.
CLIC structures operate very close to the gradient limit that is set by appearance of the vacuum breakdowns. The particles escaping the structure provide useful information about the physics of the vacuum breakdown e.g. the evolution of the surface under RF pulses or the underlying trigger mechanism. Together with the information from the measured RF powers we obtain with the new setup a more complete picture of the vacuum breakdown phenomenon that can help in achieving higher reliability and long life-time for the structures.
Here we present the first results and progress of the project.

Type of contribution

Oral

session

Experiments and Diagnostics

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