

Test notes on VT results of cavity TE1ACC001 #03

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Current test summary

Cavity TE1ACC001 has been measured the fourth time for testing A0 vertical test system after added pumping line and replaced new RF components; the cavity was kept in vacuum after the 3rd RF test in A0.

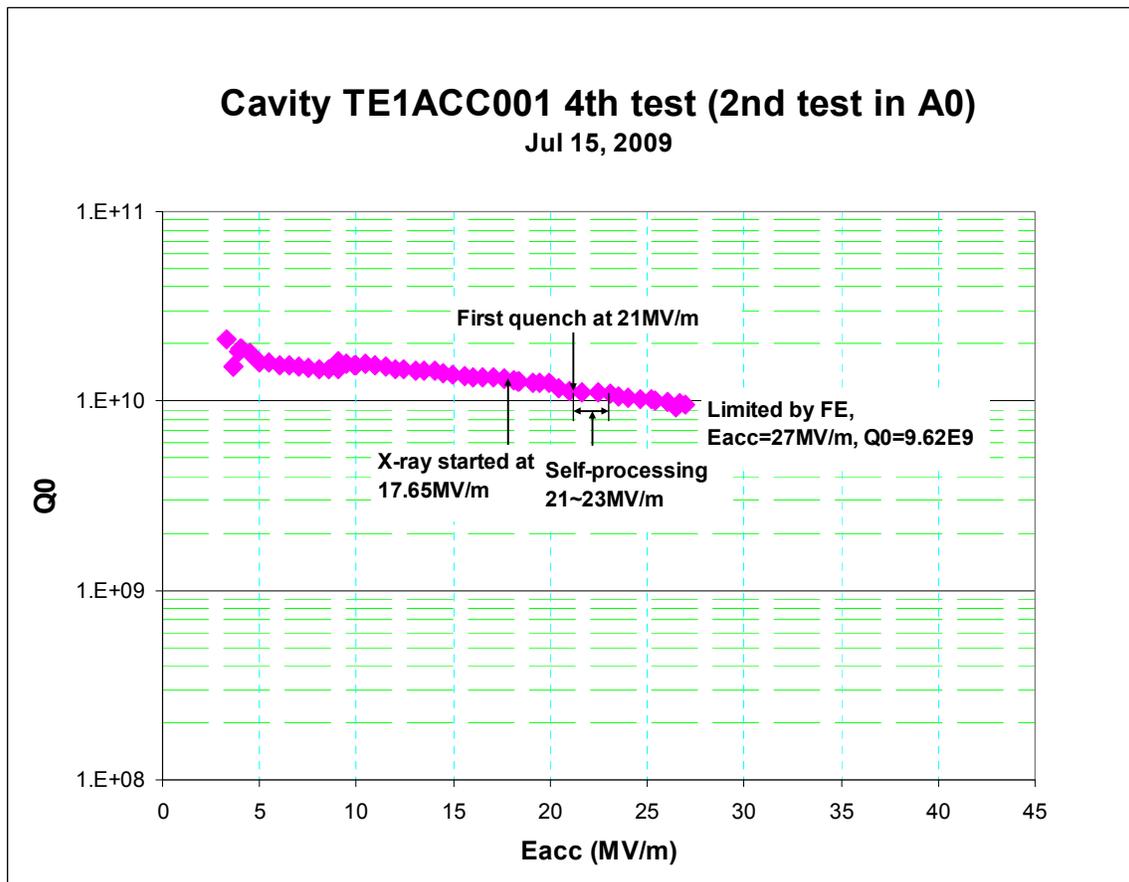


Fig 1 Eacc vs. Q_0 curve for TE1ACC001 test #4

The cable was calibrated before pumping down, the cable loss factors are $C_f=33.95\text{dB}$, $C_r=35.79\text{dB}$, $C_t=6.28\text{dB}$. The $Q_t=3.60E12$ was measured at $E_{acc}=3.99\text{MV/m}$, $T=2.02\text{K}$. During the Eacc vs. Q_0 measurement, the X-ray started at 17.65 MV/m, and the first quench happened at 21 MV/m, then the cavity started self-processing from 21 MV/m to 23 MV/m, it limited by FE and eventually reached to 27 MV/m, beyond that power level the X-ray detector triggered the system interlock.

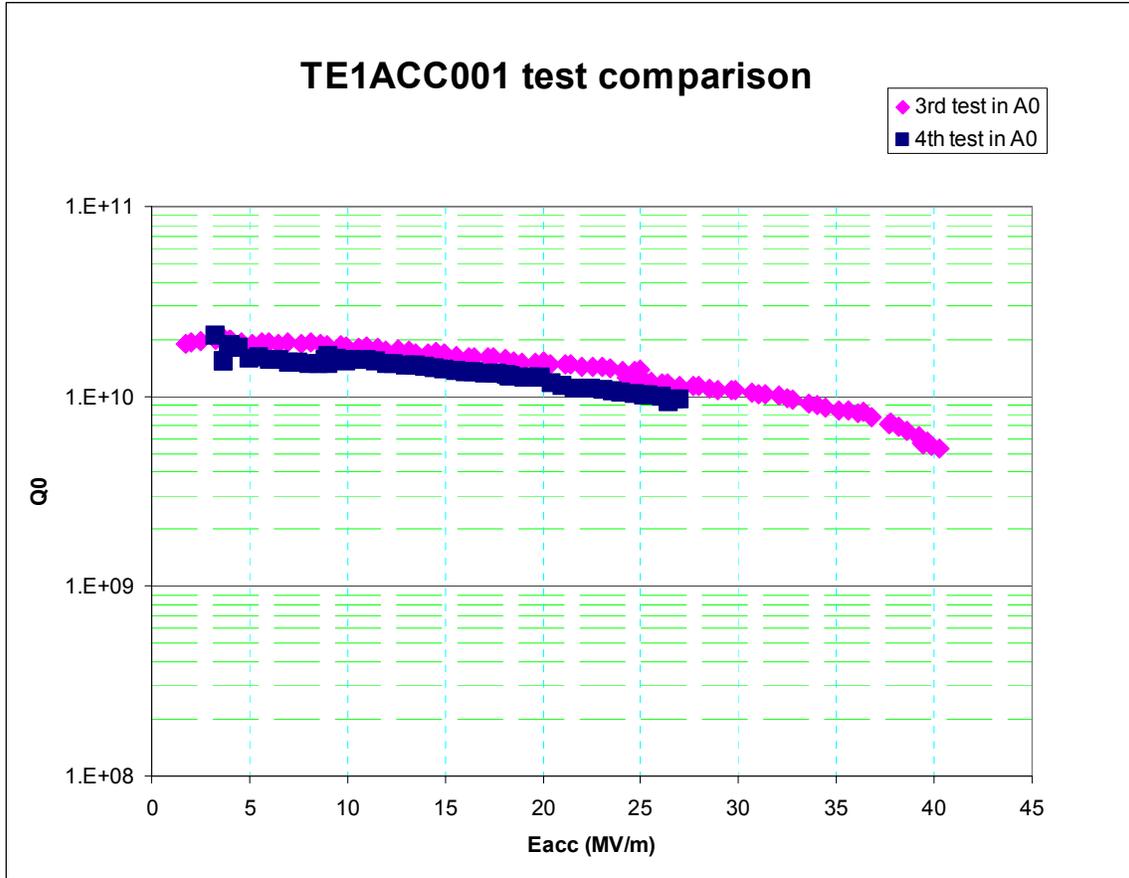


Fig 2 Cavity TE1ACC001 3rd test (in A0) and 4th test (in A0) comparison

Previous RF test

Cavity TE1ACC001 has been measured the third time for testing vertical test system in A0, the cavity was kept in vacuum after the 2nd RF test in IB1.

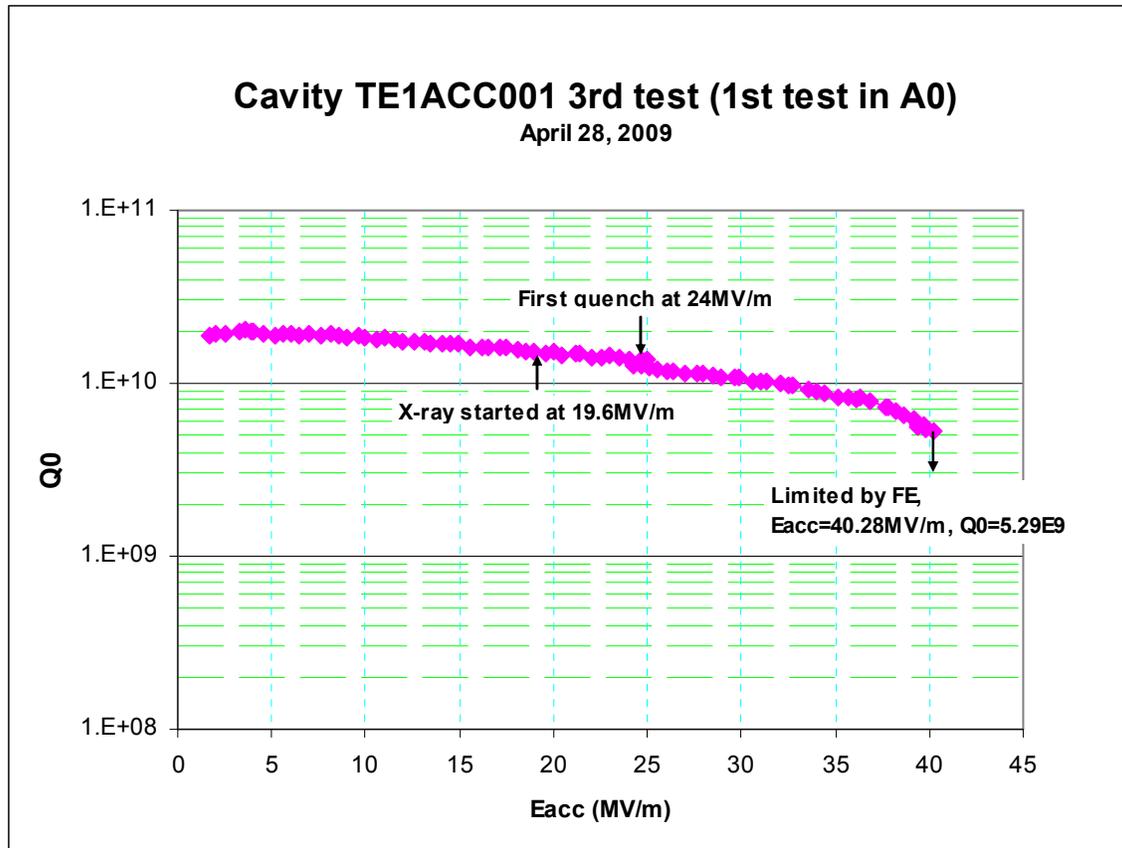


Fig 1 Eacc vs Q0 curve for TE1ACC001 test #3

The cable was calibrated before pumping down, the cable loss factors are $C_f=25.10\text{dB}$, $C_r=24.64\text{dB}$, $C_t=6.13\text{dB}$. The $Q_t=4.60E12$ was measured at $E_{acc}=3.97\text{MV/m}$, $T=2.03\text{K}$. During the Eacc vs. Q0 measurement, the X-ray started at 19.6MV/m , and the first quench happened at 24MV/m , but the cavity recovered soon, it limited by FE and eventually reached to 40.28MV/m , beyond that power level the X-ray detector triggered the system interlock.