

X band structure manufacturing status at KEK

March 27th 2009

Mechanical Engineering Center

Kenji Ueno

Quadrant #5

We are ready to assemble four quadrants to make one body with cooling pipes.

We assemble the vacuum chamber.

We reduced the vacuum leakage by flattening the top flange and increasing the bolts size. However still small leakage remains. We should fix this problem.

TD18_VG2.4_Disk #2, #3

We shipped all parts of structure #2 to SLAC by middle of March.

Recovery cells for #3 are to be delivered to KEK by the end of March. We will check RF with clamping and ship those to SLAC in the middle of April.

C10, CD10

DISK:C10_vg1.35 #3,#4
and CD10_vg1.35 #1,#2

We should decide the scenario and planning/schedule on C10 and CD10 based on the strategy of the coming fiscal year.

High power test related

T. Higo, S. Matsumoto

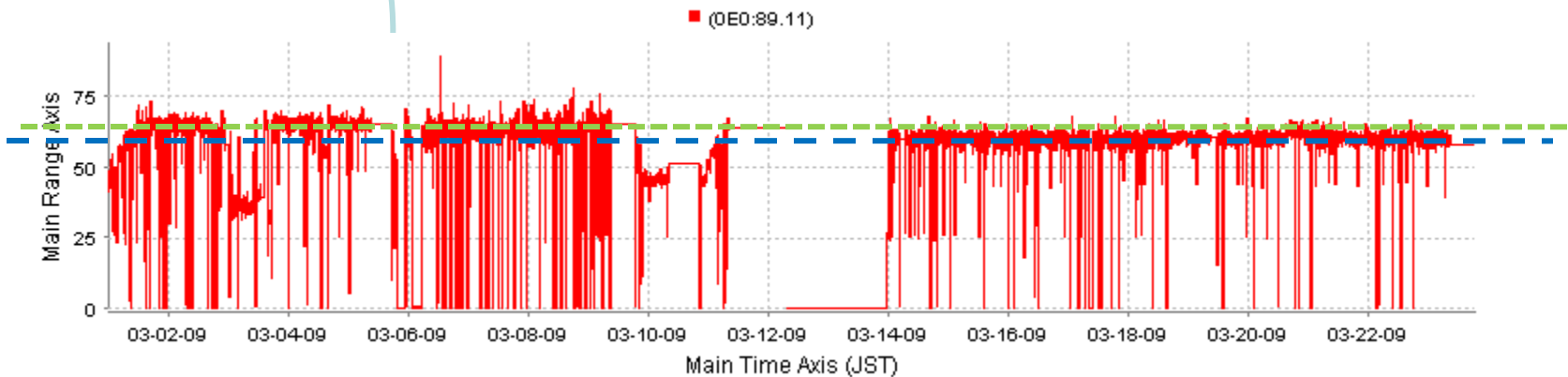
- Constant power run for 9 days at 105MV/m. Encountered number of breakdowns at the beginning. Then the rate decreased rapidly. The breakdown rate is under evaluation.
- Nextef is off this week and probably next week for the work related to the C-band test stand.

Run in March 2009

$$E_{\text{acc}} = 110 - 105 \text{ MV/m}$$

Previous 65MW running statistics summary

March



Total 48 INTLK's ~ 10^{-6} BD/pulse/structure, mostly with only FC-UP, which we believe spurious. Now evaluating actual breakdown rate.

Near future plan

- We will study breakdown rate and others, for a month or so, before installing the quadrant. Items are as follows;
 1. Breakdown rate evaluation at 400ns, moderate power and at 100ns at higher power. It may not be clear how we proceed, because some parameter ranges are outside of what is already processed.
 2. Dark current measurement:
 3. Trial of phase measurement with IQ.
- We may not do reverse-power operation unless it becomes the key issue.
 1. Checking dark-current code?
 2. Confirming the gradient by measuring the peak energy?
 3. Confirming breakdown position? At the matching cell or at the cell with highest field?

Others

- SiC material
 - Checking the export limitation.
 - Which country is it be sent and evaluated?
 - Started discussing with a company.
 - We may send you material and some data in a few weeks.
- Budgetary situation of JFY2009
 - Not yet informed, though it smells very tight.