Checking Specifications for Anode Electronics

CMS Endcap Muon Meeting – CERN

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N. Terentyev

(Given by T. Ferguson)

I. Requirements on Maximum Time Smearing

A) Use muon tracks from last summer's testbeam run at GIF.

B) Add random Gaussian smearing with different σ's to each time measurement.

C) Measure the ALCT efficiency versus σ.

CONCLUSION: To keep the inefficiency less than a few percent, $\sigma < 5$ ns.

II. Requirements on Maximum Percentage of Bad Channels

A) Again use muon tracks from testbeam at GIF.

B) Use beam chambers to predict hit wire group.

C) Turn off individual channels or entire chips with different probabilities. Measure subsequent ALCT efficiency.

CONCLUSION: To keep inefficiency less than a few percent, channel and chip failure probability should be $< 5\%$.