GEM Production and testing

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- A total of 45 GEMS received so far from CERN.
  --- 25 Single GEM units prepared so far
  10 Au and 15 Standard (Cu)

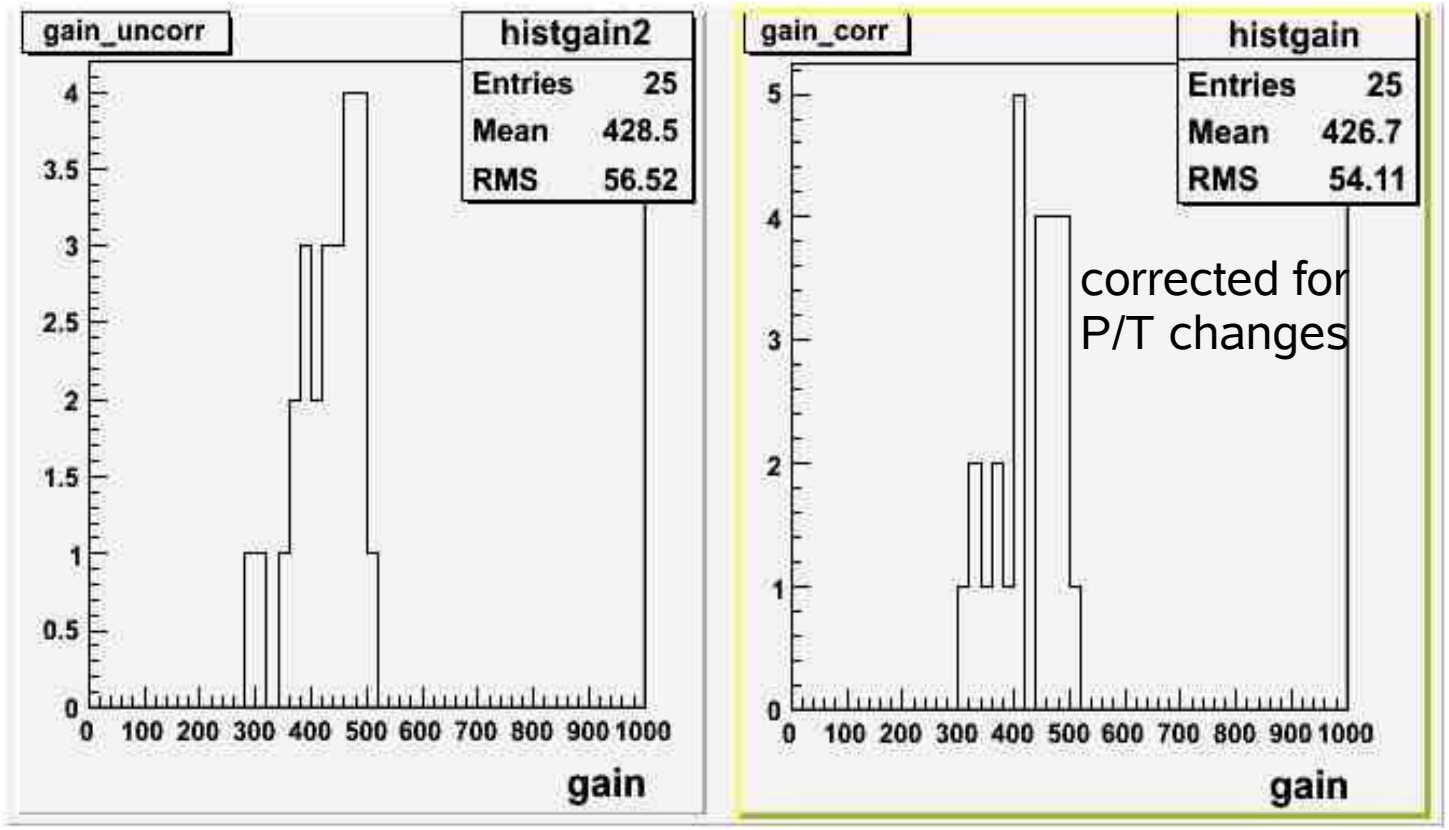
- Each of these have been individually tested for gain uniformity using Fe55 source and in Ar/CO2.

- Three tripple GEM modules were prepared according to a minimum rms in gain in the combined unit
  --- These were tested in CF4

- HBD database prepared. 2 tables -> by name “hbd”
  “gem_singles”, “gem_modules”

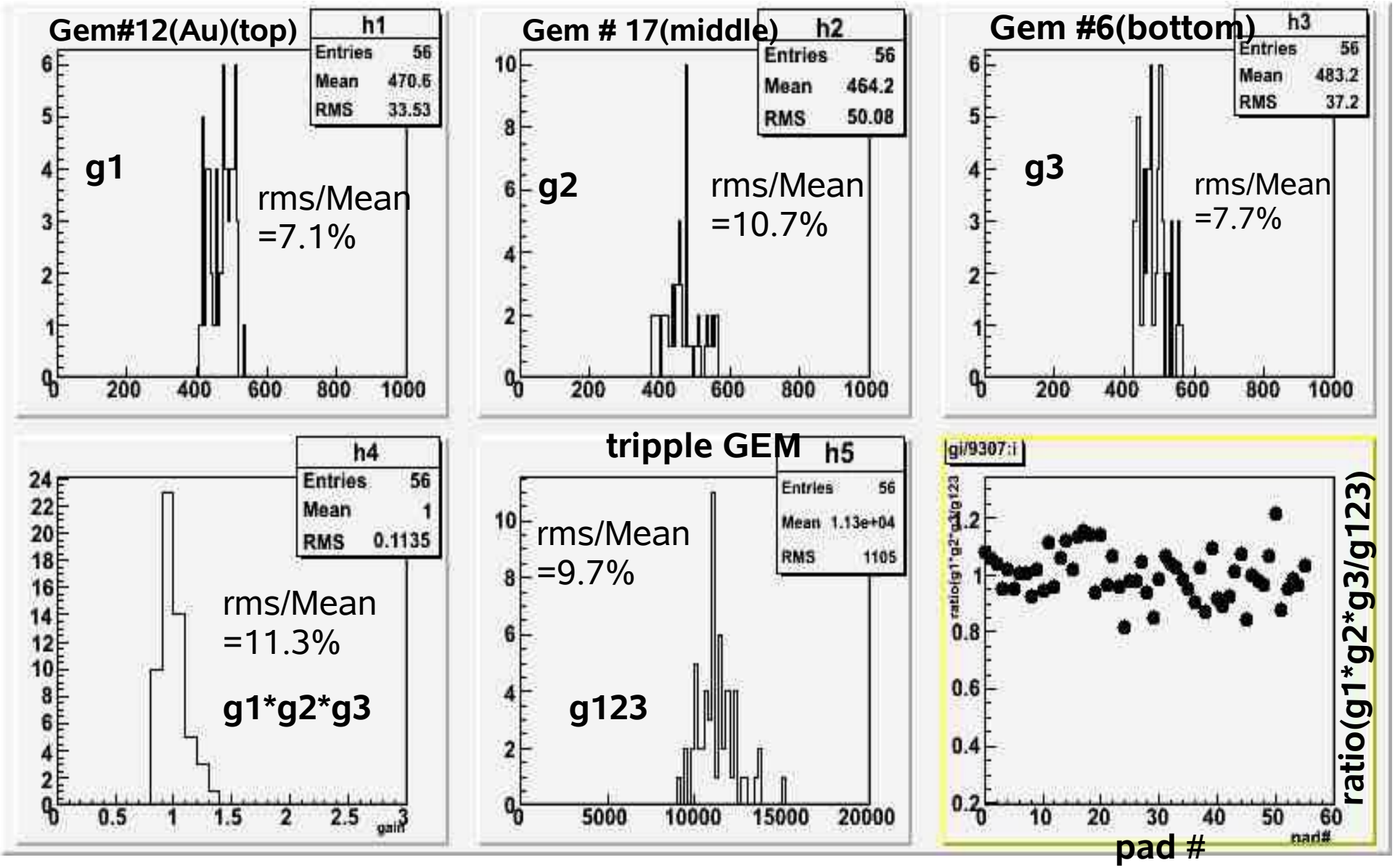
Distribution of average gains for 25 Single-GEMS

-- gas mixture- Ar/CO2
-- delta_V= 495 V
-- source Fe-55



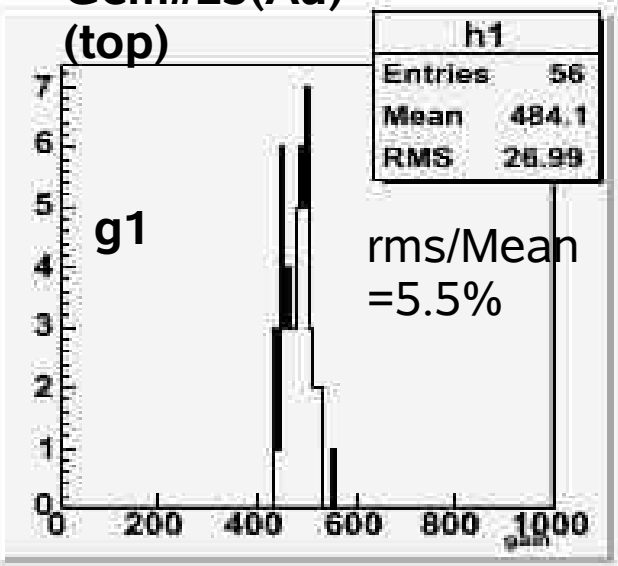
Gain distribution – single GEMS(g1,g2,g3) and tripple GEM(g123)

Triple GEM Module # 1 (gain corrected for P/T changes)

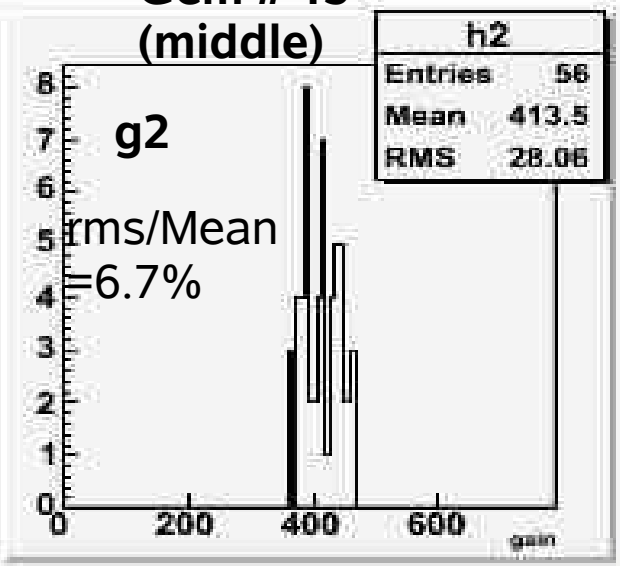


Triple GEM Module #2

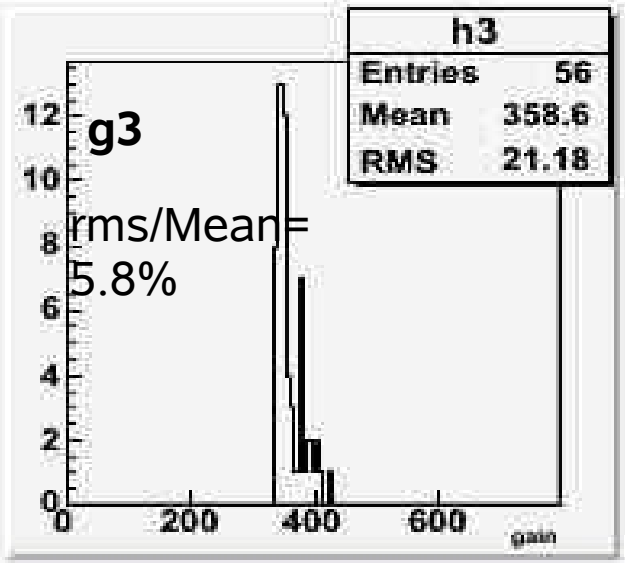
Gem#25(Au) (top)



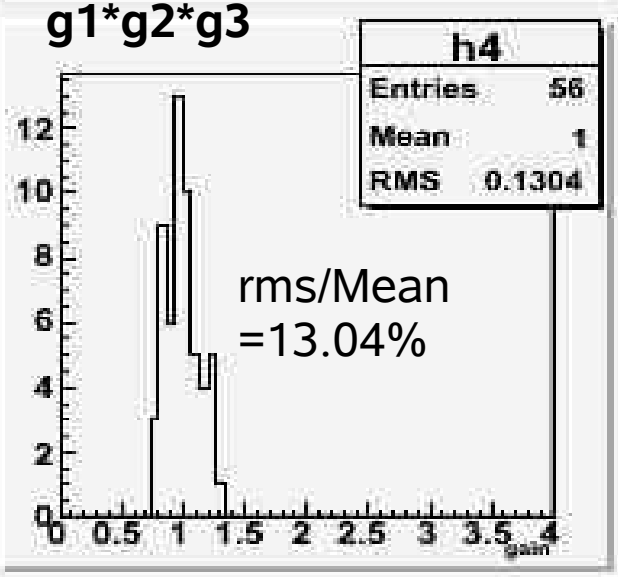
Gem # 15 (middle)



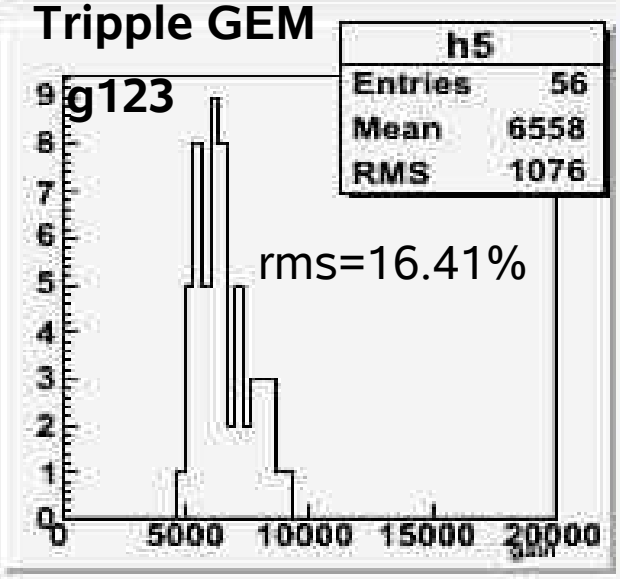
Gem #30(bottom)

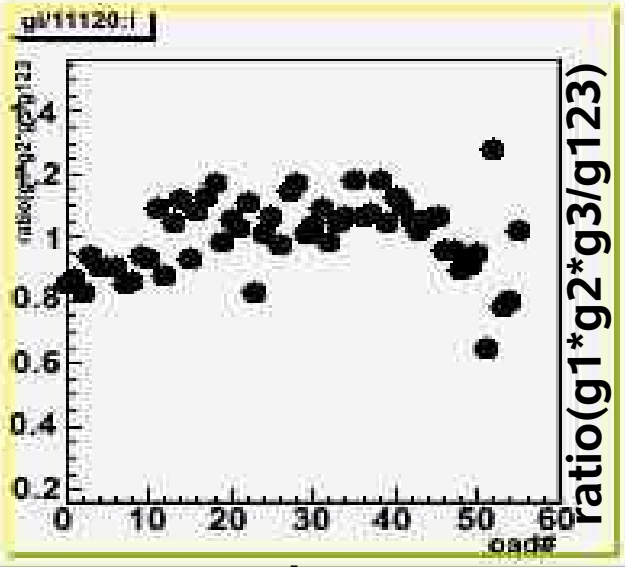


g1*g2*g3

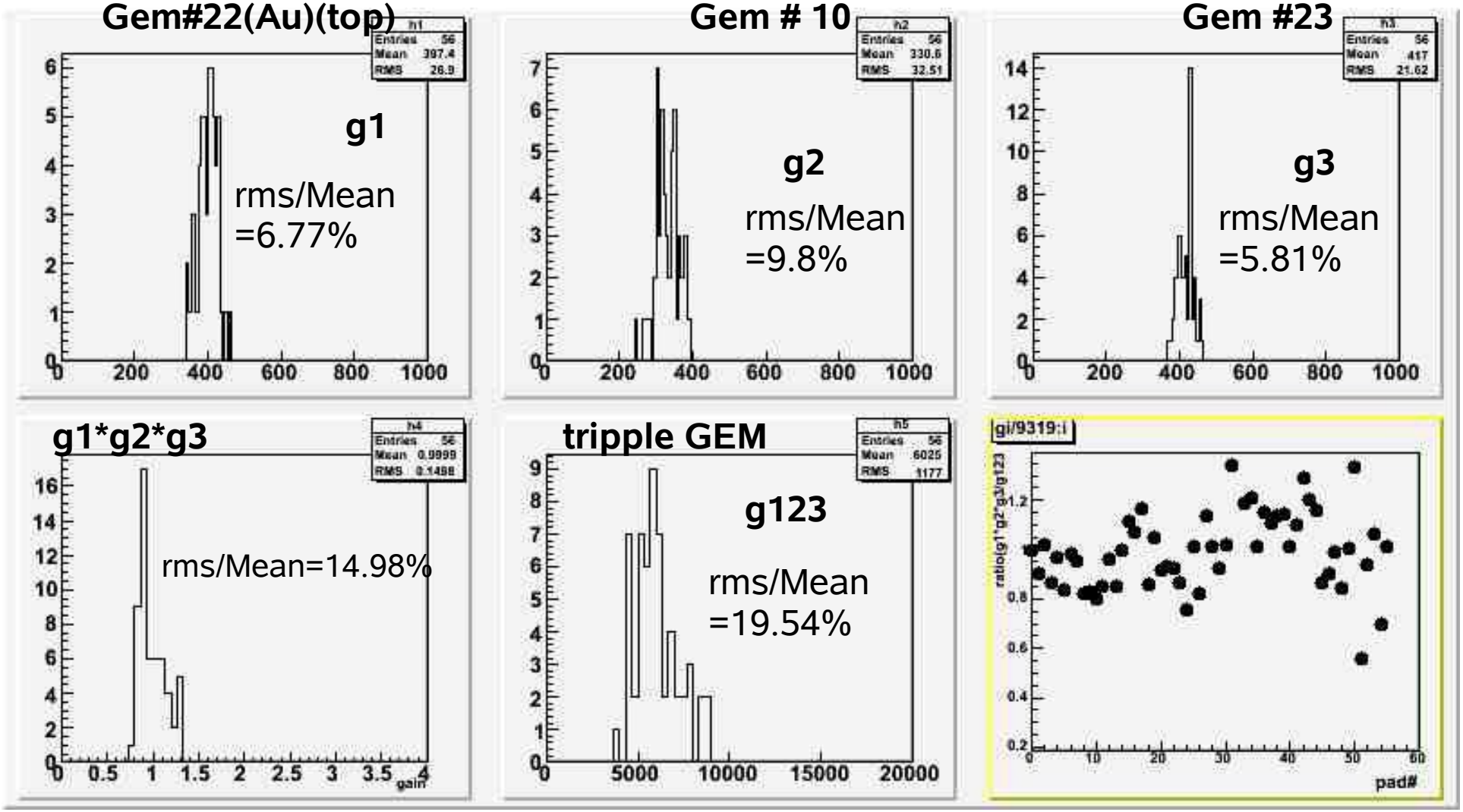


Tripple GEM g123





Triple GEM Module #3



SUMMARY

- GEM production resumed
  -- received a fresh batch of 15 Standard GEMS and
  and frames from CERN.
  – one GEM produced and one GEM tested each day

- Three tripple GEM modules were tested
  --- the ratio of the product of the individual GEMS to
  that with the combined GEMS is flat implying
  that there is no non-uniformity due assembly.

- All information regarding the test of single and triple GEM modules have been put into database. It is regularly updated

- The algorithm for combining GEMS to form a triplet module is underway. More number of GEMS needed for optimizing the algorithm