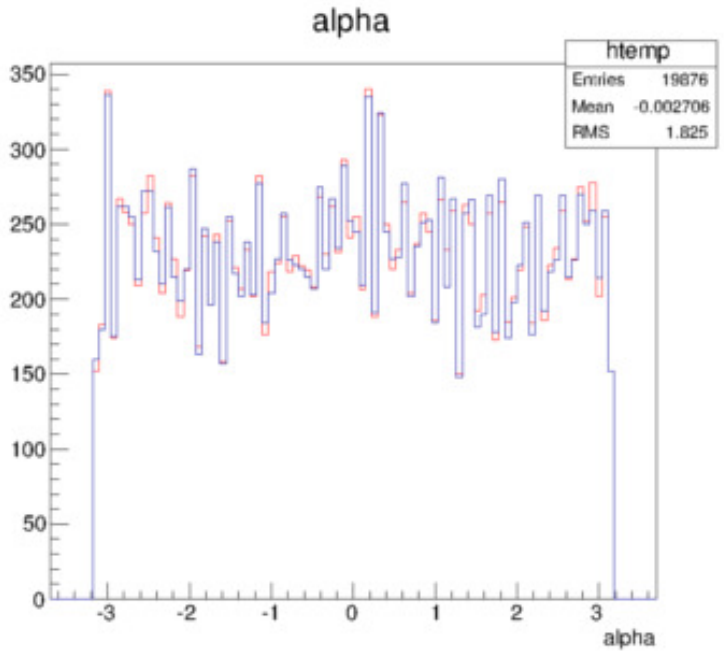
Hierarchy constraint patch

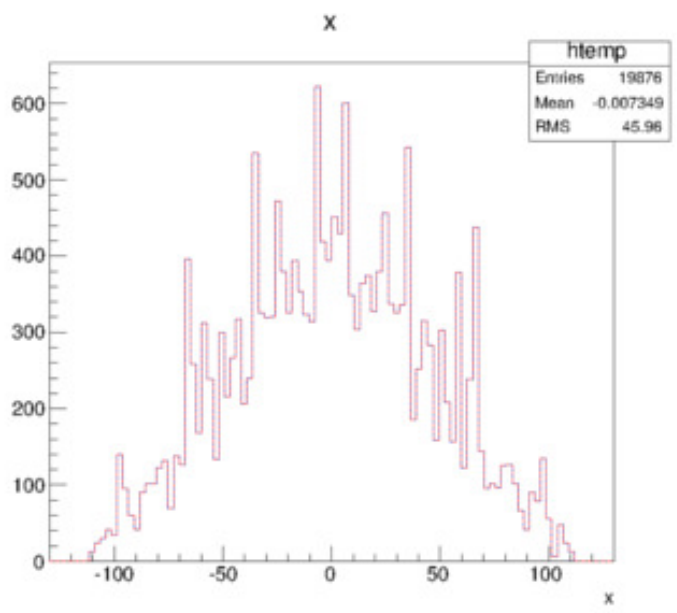
Andrii Gizhko, Matthias Schroeder (DESY)

15.10.2013 CMS Alignment Meeting

Reproducing previous 2011 alignment results

Nastja's 2nd iteration of 2011 alignment (mp1332) have been rerunned (mp1364) with exactly the same setup

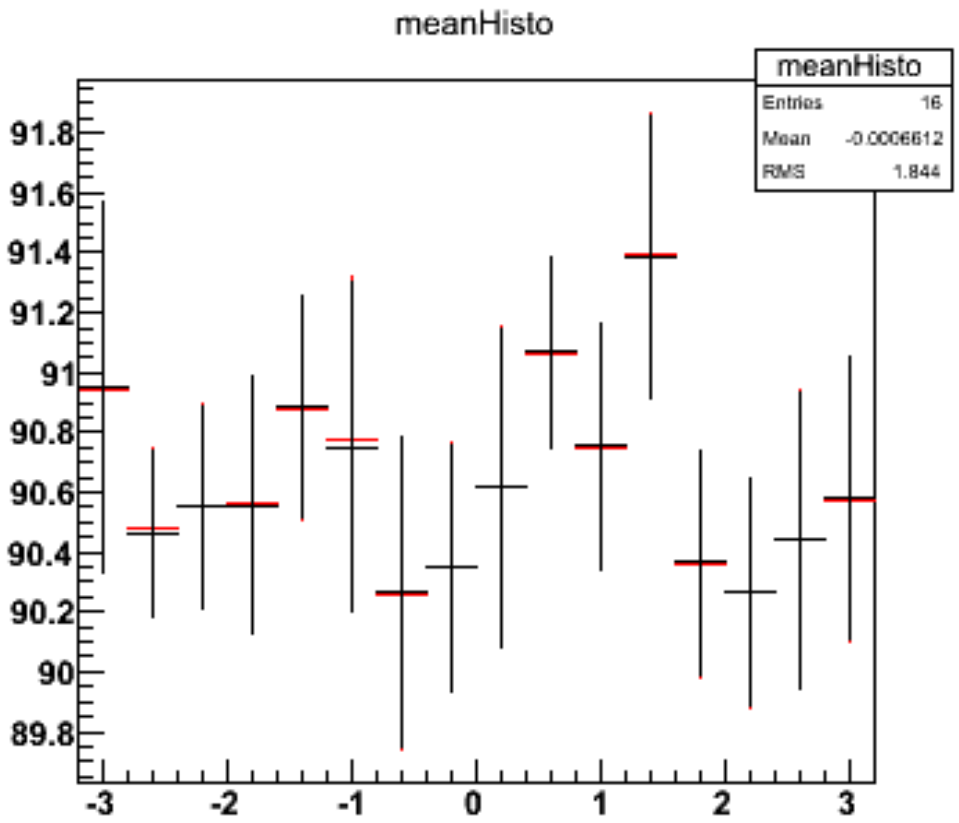




Alignment geometry comparison
/afs/cern.ch/cms/CAF/CMSALCA/ALCA_TRACKERALIGN/data/commonValidation/agizhko/alignmentValidation_mp1332_mp1358

Reproducing previous 2011 alignment results

Zmumu validation (using *Dataset_Run2012B_TkAlZMuMu_v1*) :



Black - mp1364, red -mp1332. In perfect agreement.

Hierarchy constraint patch

TWiki page :
https://twiki.cern.ch/twiki/bin/viewauth/CMS/TkAlignmentLegacyThoughts
Claus presentations : Tracking Alignment meeting 14 Feb 2013, 25 Jul 2013

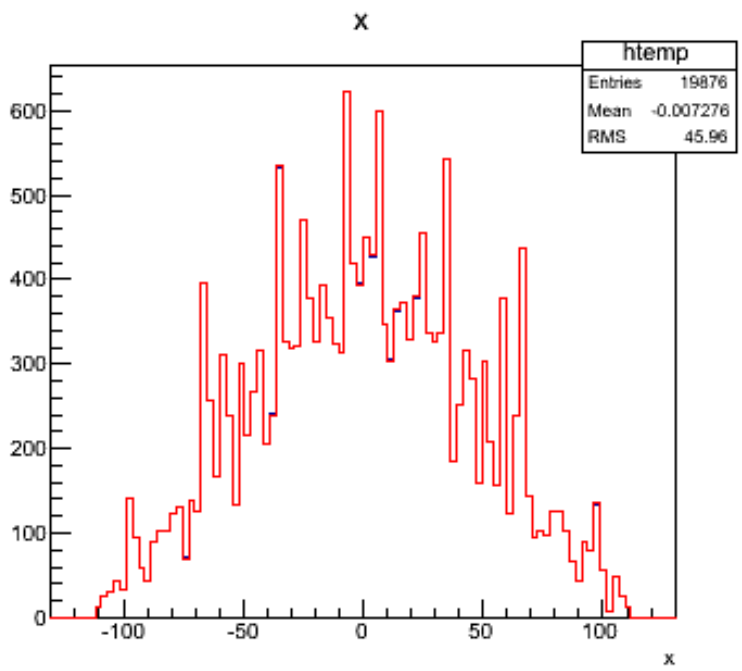
Alignment areas

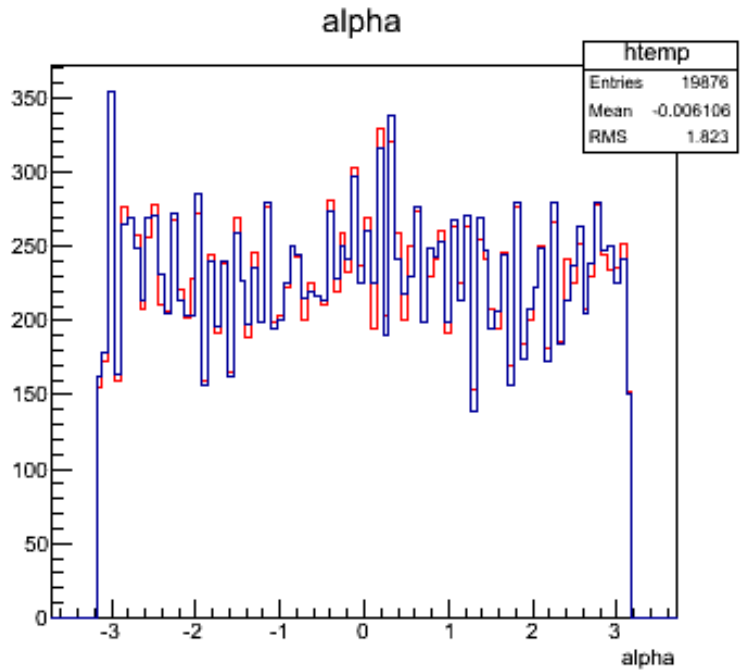
.../MP/MPproduction/CMSSW_4_4_5_agizhko/CMSSW_4_4_5/
(4_4_5 version +hierarchy fix patch)

test run with patched CMSSW .../MP/MPproduction/mp1365/ (2011 data 0 iteration alignment (the same as mp1321) with hierarchy patch)

Geometry comparison

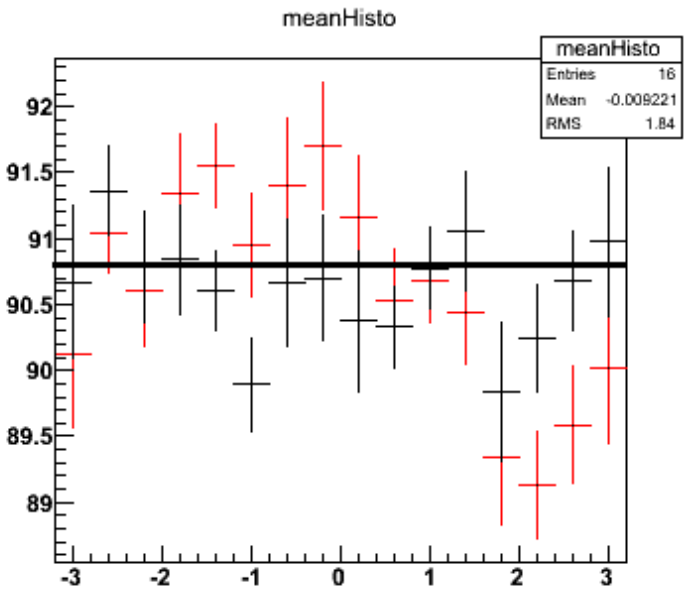
Blue -default mp1321, red - mp1365 (with patch)



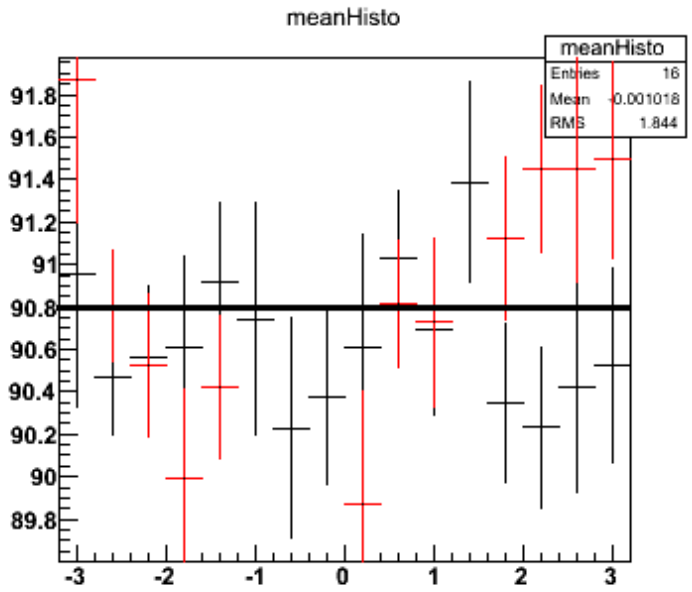


Z→ $\mu\mu$ validation

Zmumu validation (using Dataset_Run2012B_TkAlZMuMu_v1) :
Black - mp1321 (default), red - mp1365 (with patch)



Phi minus



Phi plus

Summary

- Previous 2011 alignment results have been reproduced
- $Z \to \mu\mu$ validation showed that 0 iteration with hierarchy patch is worse than without it. Further investigation required.