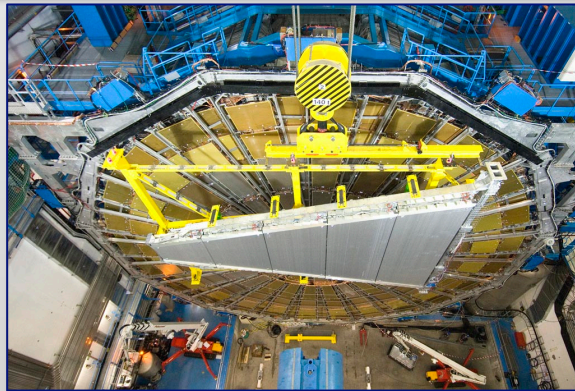


MDT Wire Sag Validation



Steven Goldfarb
University of Michigan
CERN – 28 Jul 2009

Current Tests

Data Samples

/afs/cern.ch/user/m/muonprod/roberth/CSC.singlepart_mu100_15.2.0_ATLAS-GEO-07-00-00

Software

Generated / Simulated with 15.2.0

Geometry

ATLAS-GEO-07-00-00 / ATLAS-GEONF-07-00-00

Barrel Sectors 1 & 5 / Endcap Sectors 1 & 5

Magnetic Field On / Off

Processing

Software

Digitization / Reconstruction with 15.3.0.1 (MuonRecExample-01-06-06)

Digitization (with / without geometric sag)

topSequence.MDT_Digitizer.MDT_DigitizationTool.UseWireSagGeom = True / False

Corrections (with / without geometric sag)

ToolSvc.MdtDriftCircleOnTrackCreator.DoWireSag = True / False

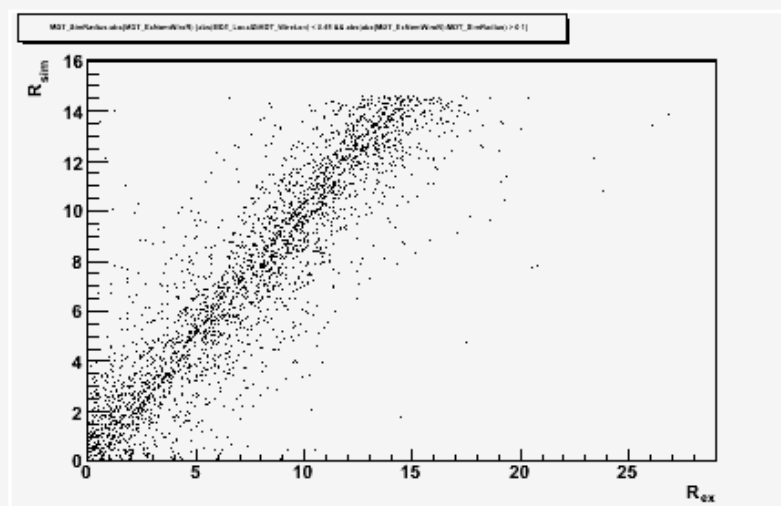
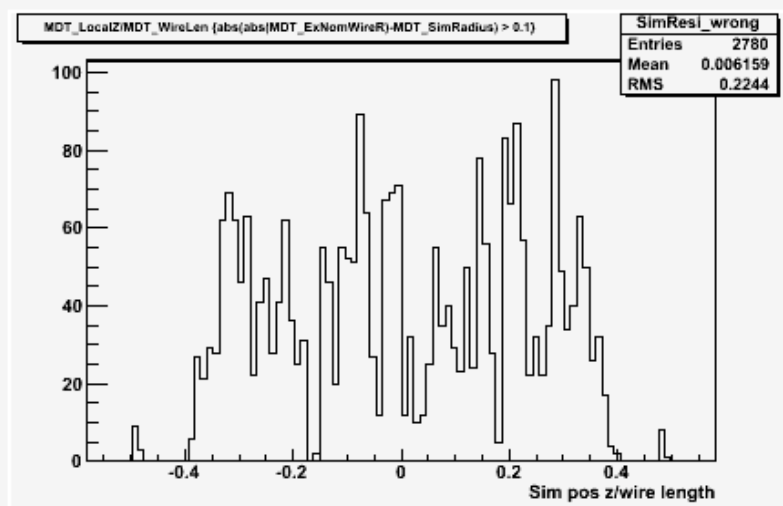
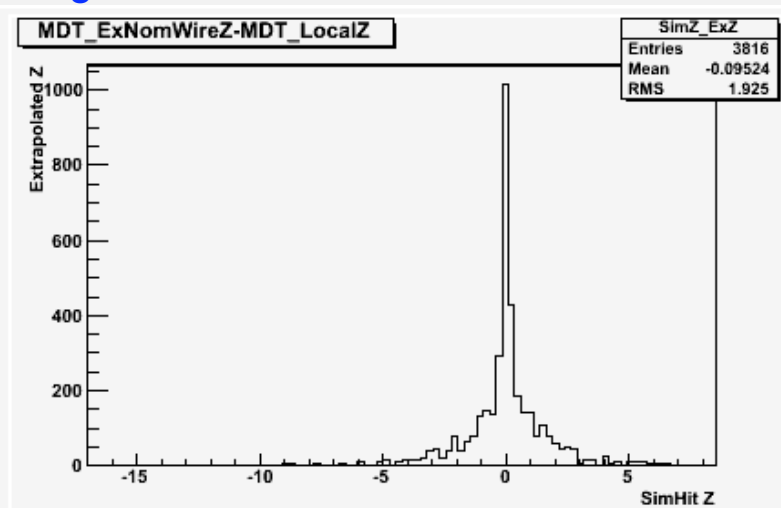
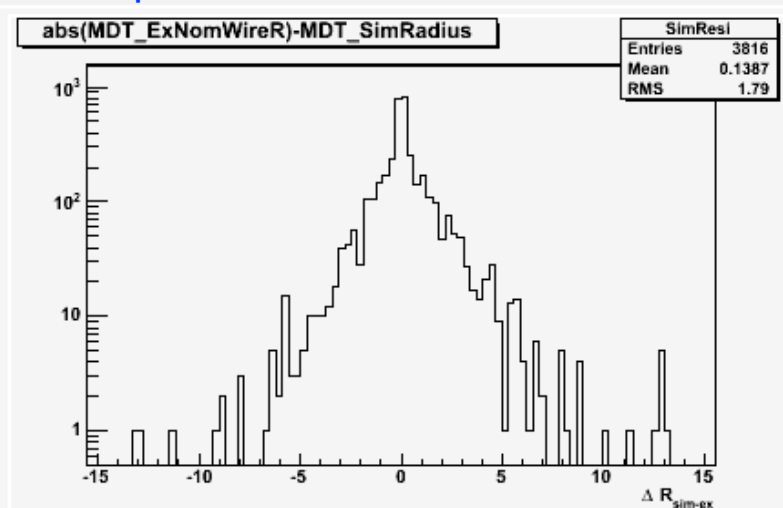
Propagator (when Field On):

if muonRecFlags.InputData == 'magfield':

topSequence.MDTPRDValAlg.Propagator = ToolSvc.MuonPropagator

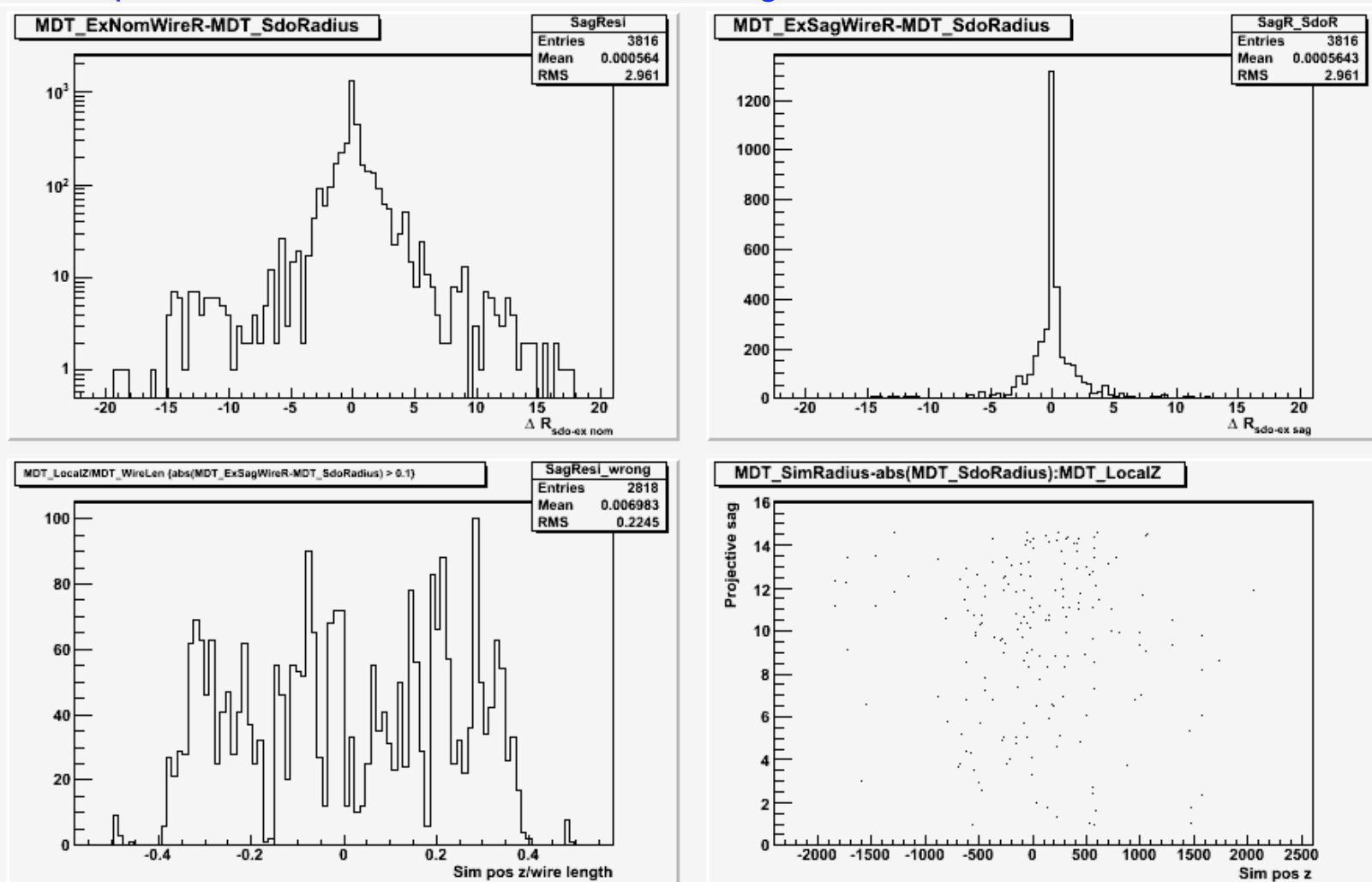
The Plots

Endcap Sector 1 / No Field / No Geometric Sag / No Geometric Corrections



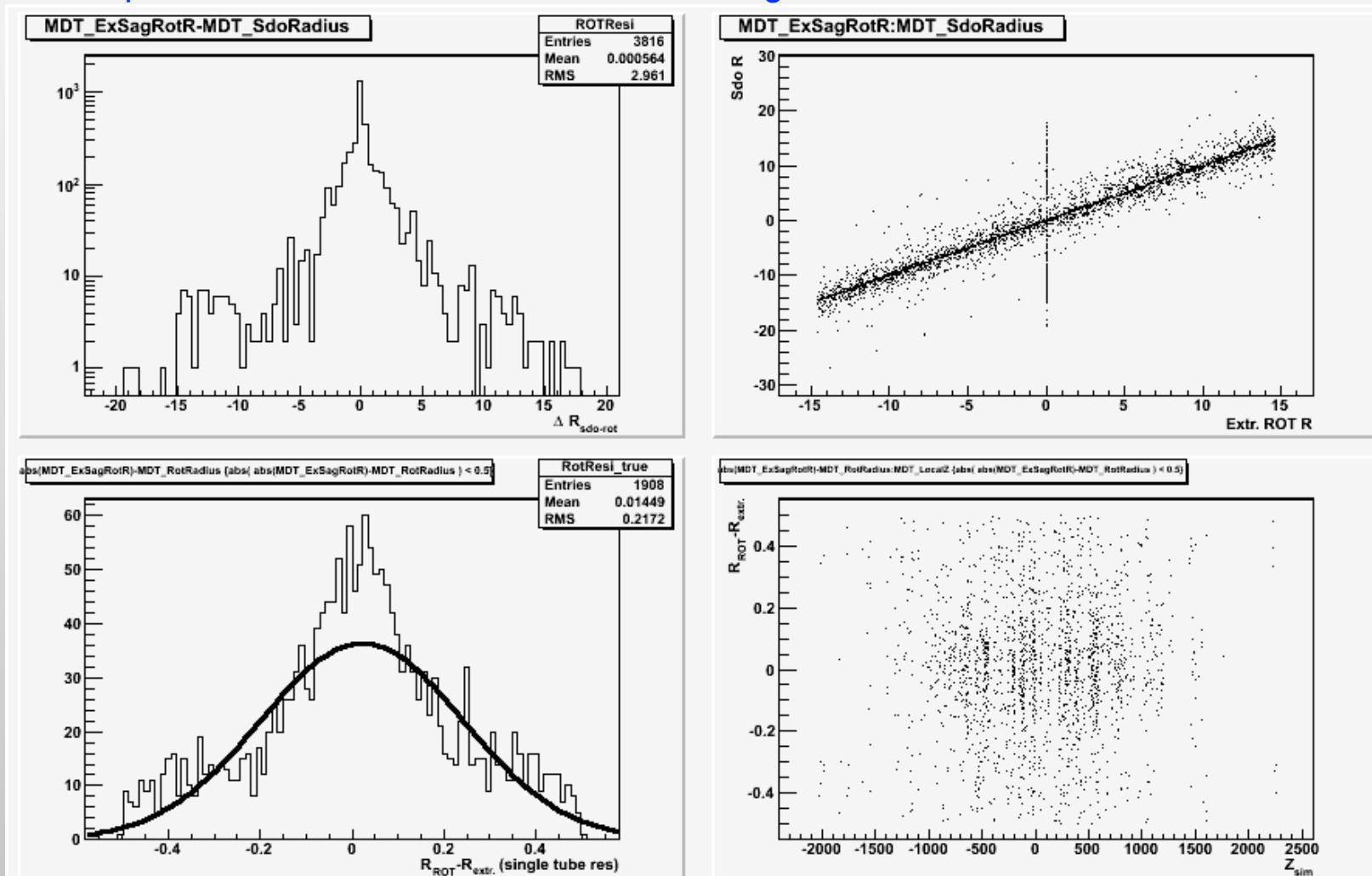
The Plots

Endcap Sector 1 / No Field / No Geometric Sag / No Geometric Corrections



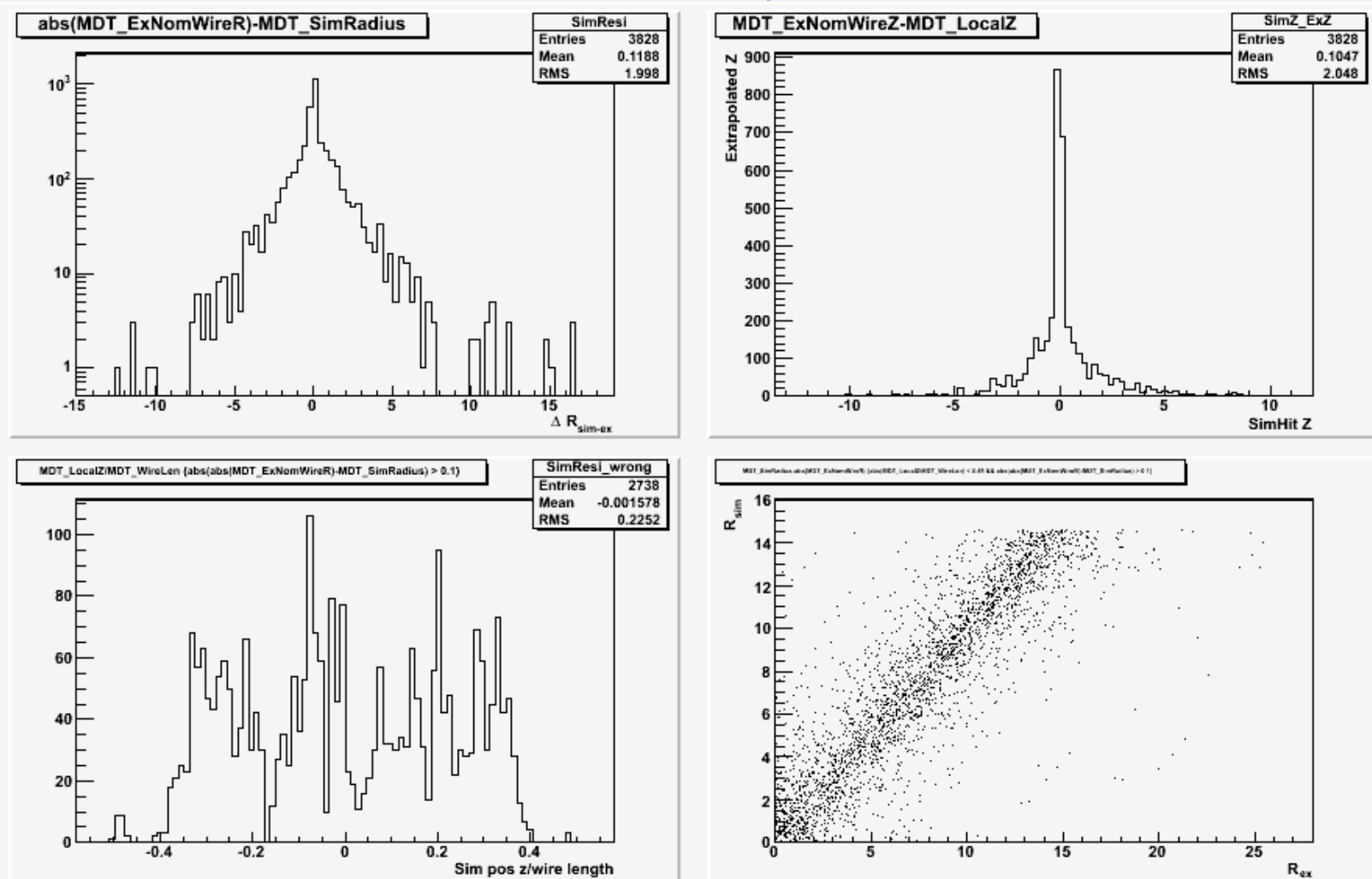
The Plots

Endcap Sector 1 / No Field / No Geometric Sag / No Geometric Corrections



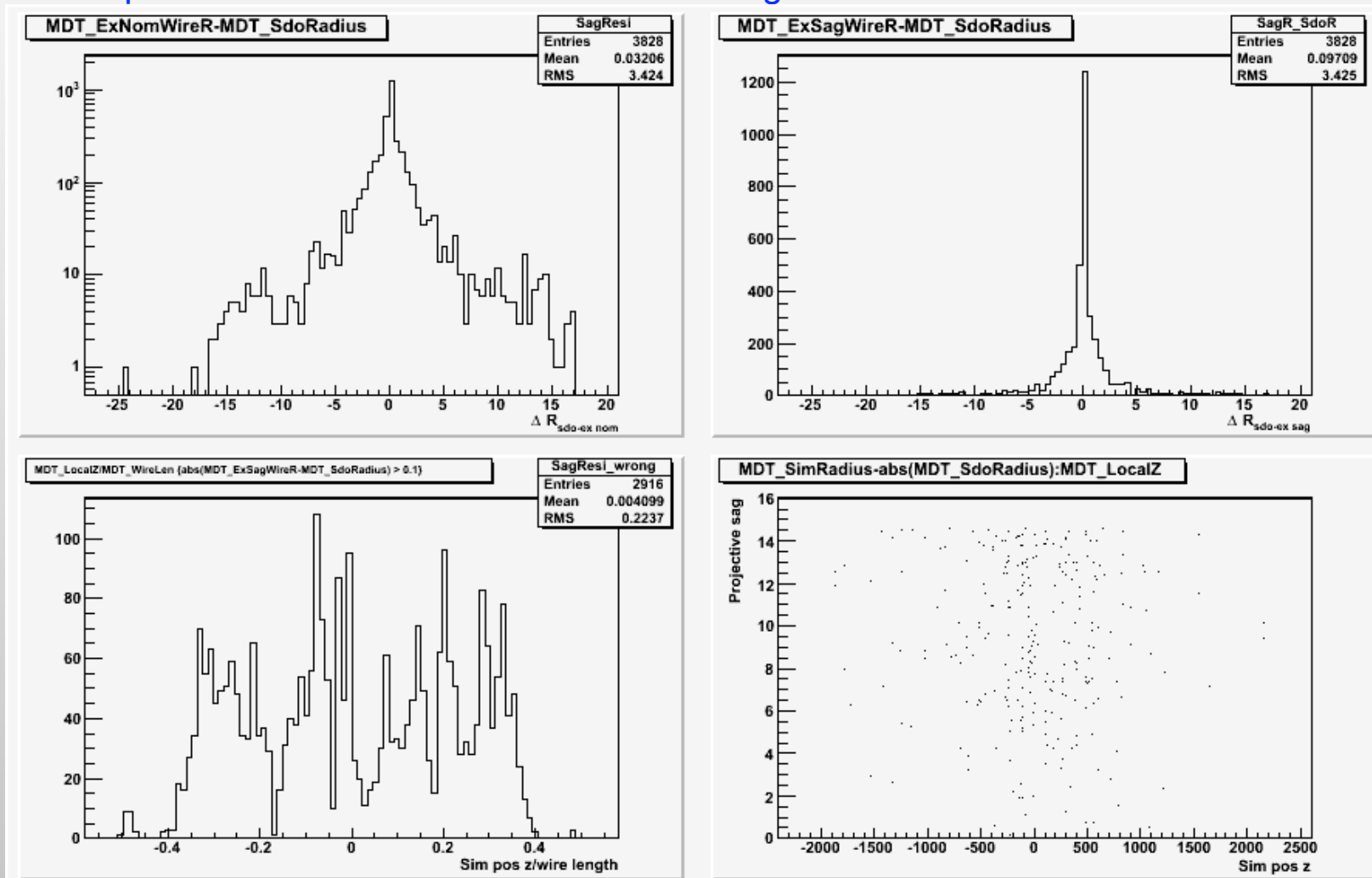
The Plots

Endcap Sector 5 / No Field / No Geometric Sag / No Geometric Corrections



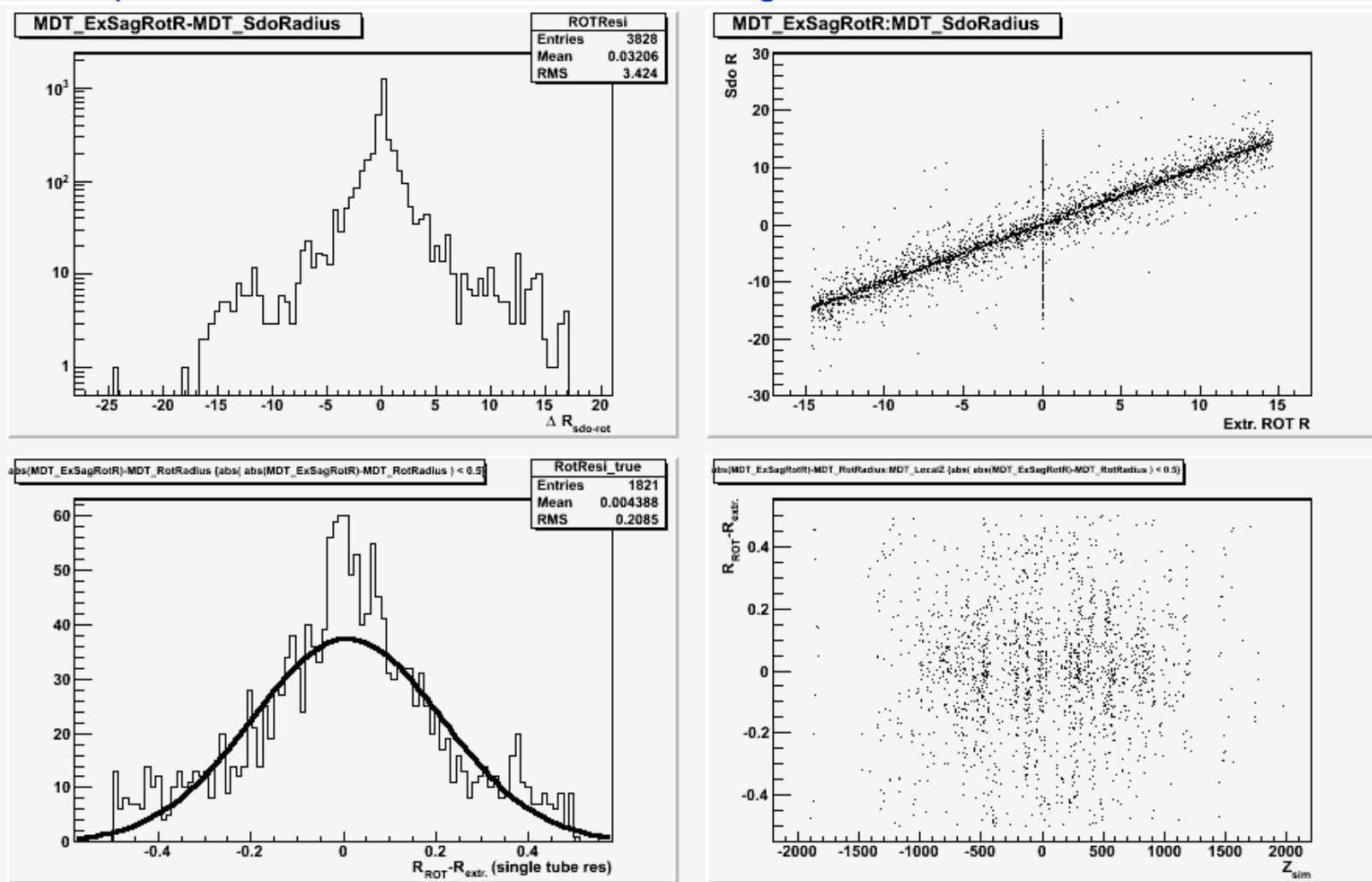
The Plots

Endcap Sector 5 / No Field / No Geometric Sag / No Geometric Corrections



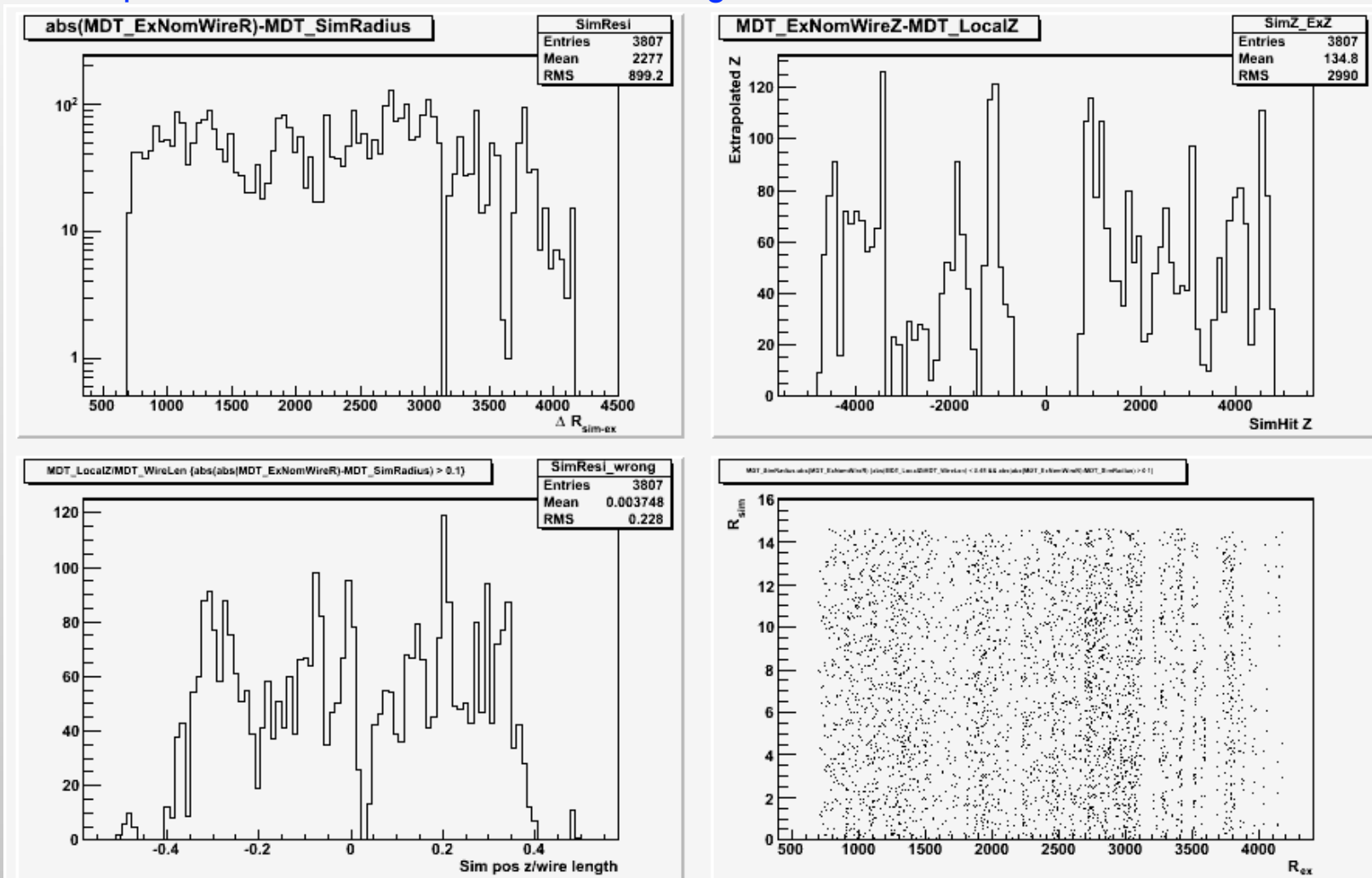
The Plots

Endcap Sector 5 / No Field / No Geometric Sag / No Geometric Corrections



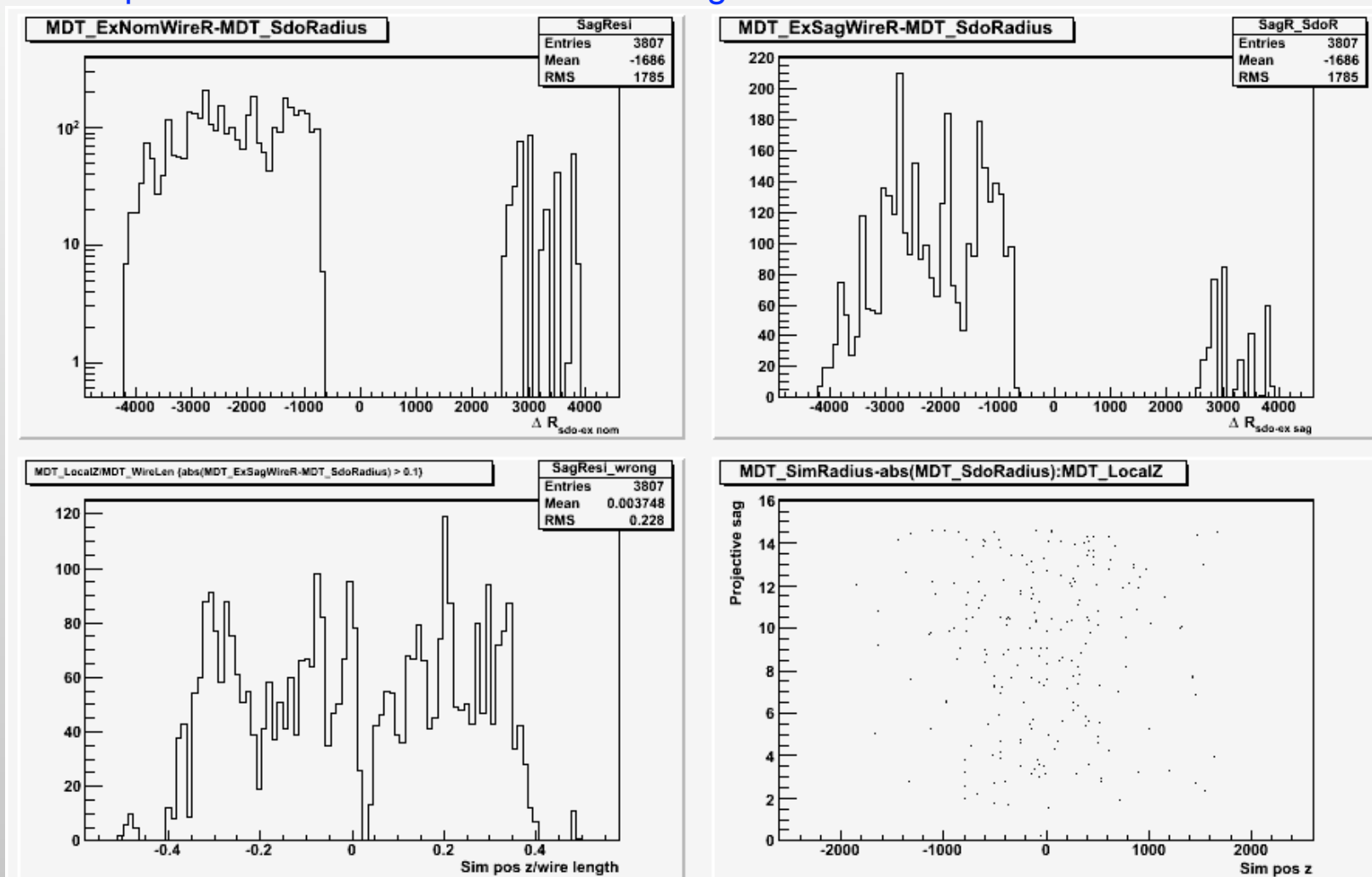
The Plots

Endcap Sector 5 / Field / No Geometric Sag / No Geometric Corrections



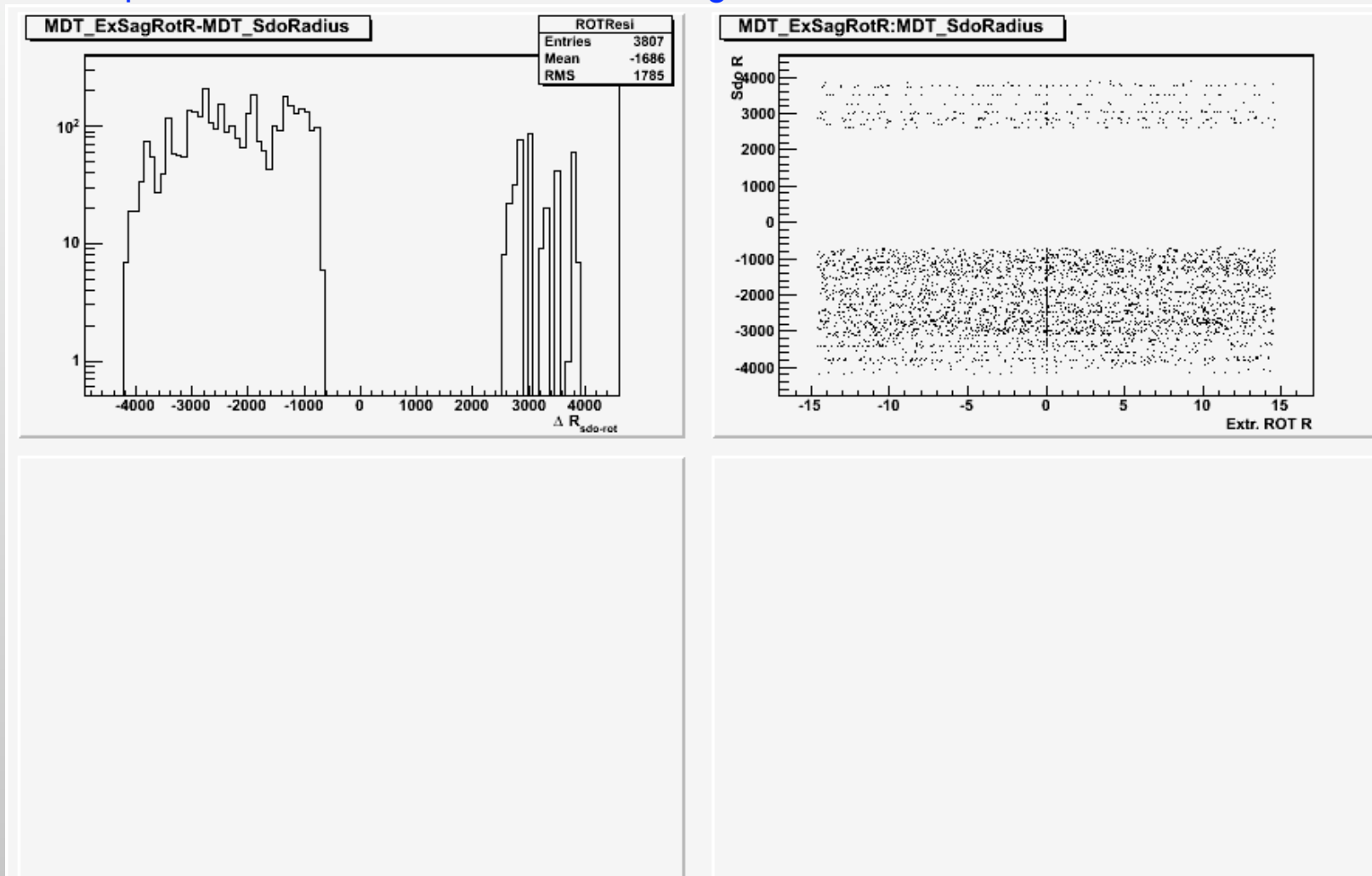
The Plots

Endcap Sector 5 / Field / No Geometric Sag / No Geometric Corrections



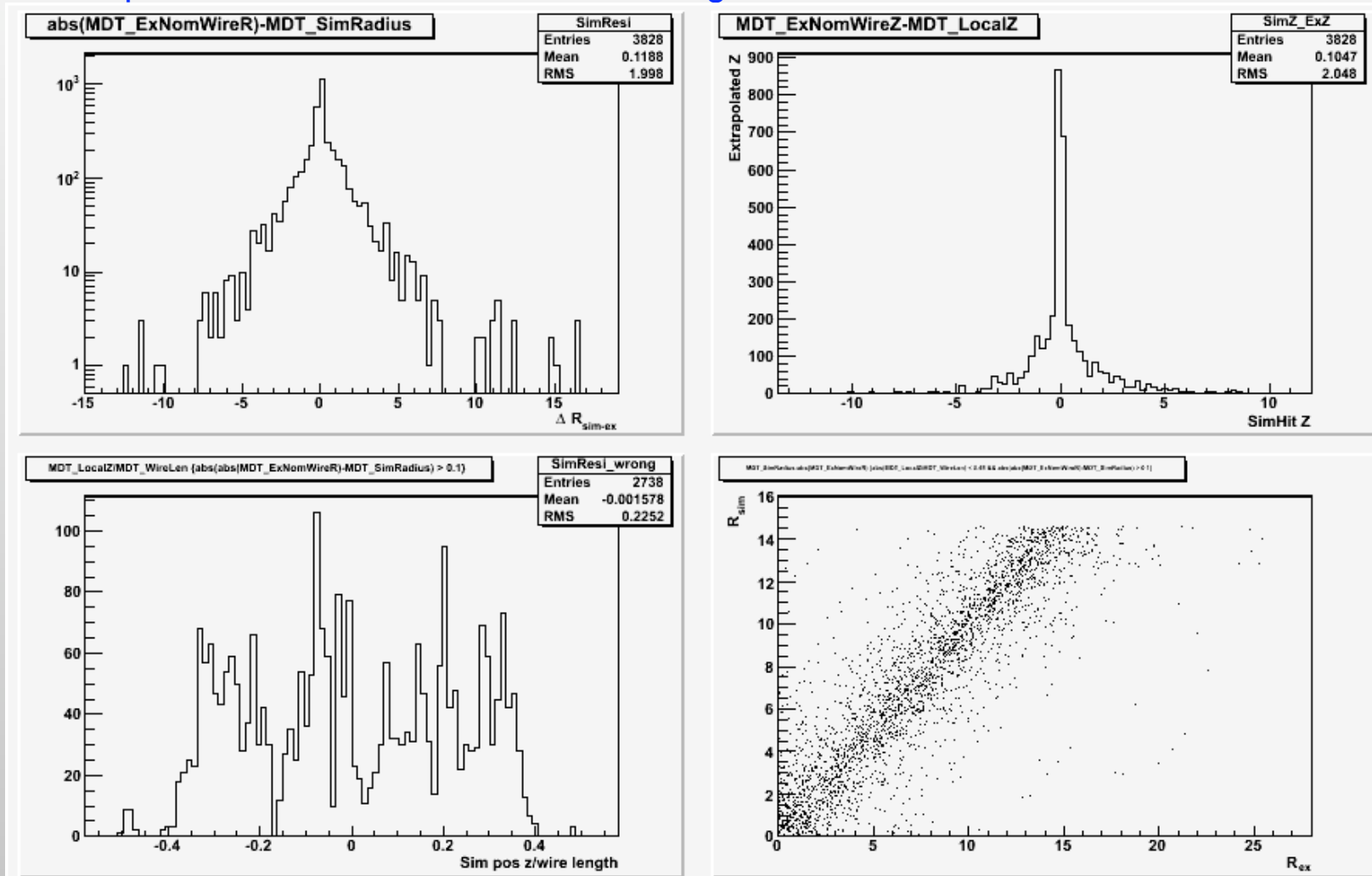
The Plots

Endcap Sector 5 / Field / No Geometric Sag / No Geometric Corrections



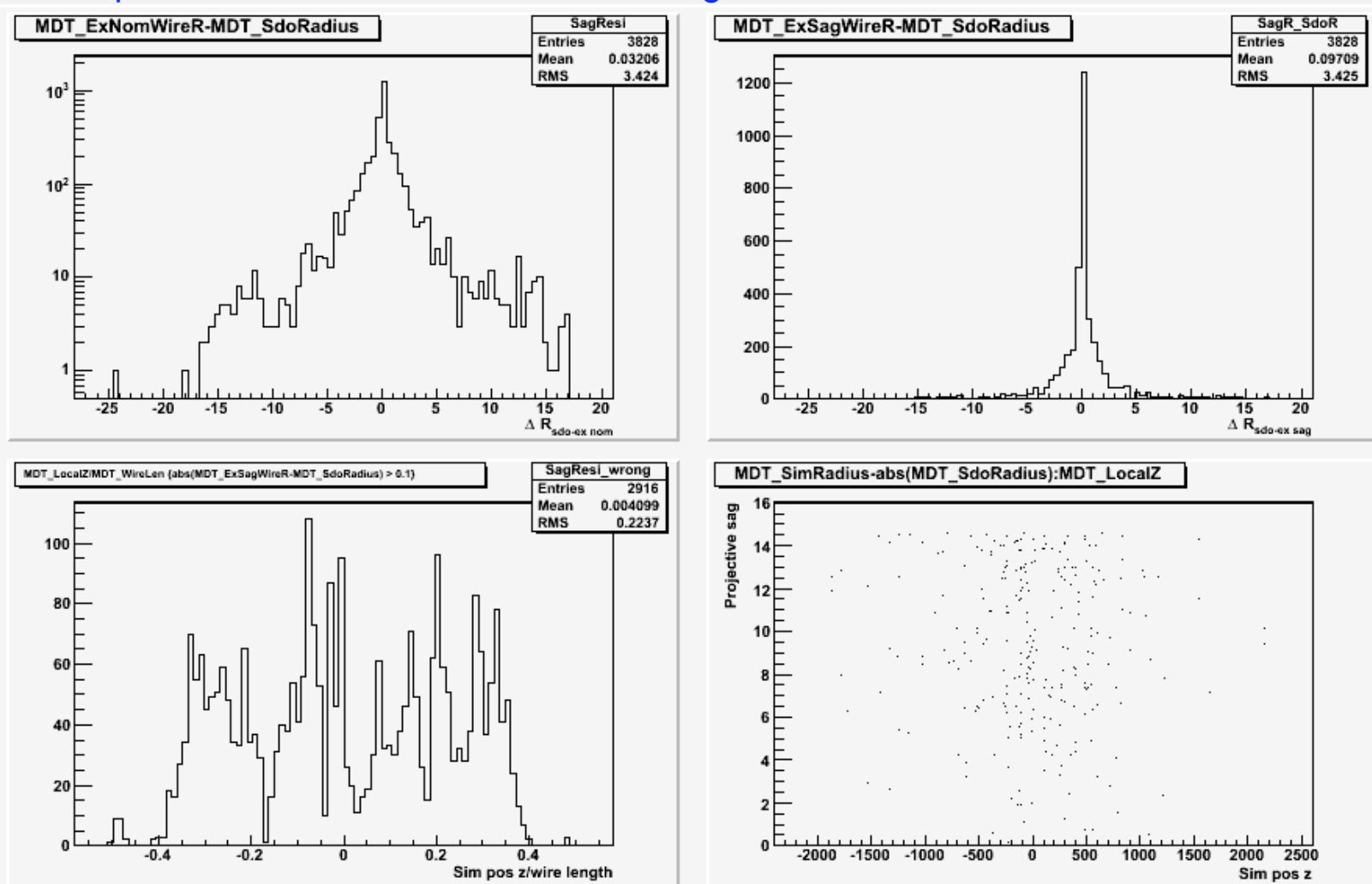
The Plots

Endcap Sector 5 / No Field / Geometric Sag / No Geometric Corrections



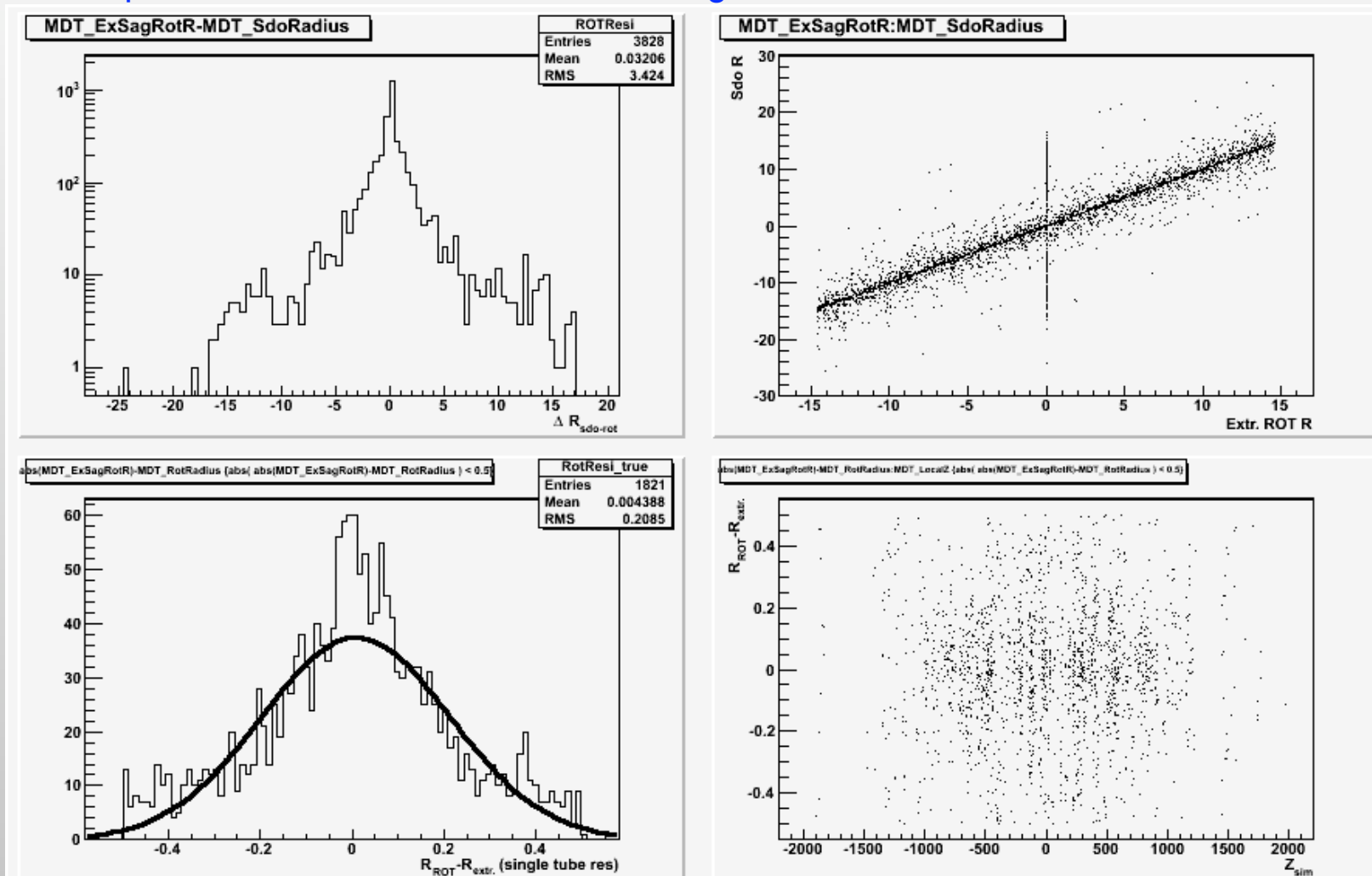
The Plots

Endcap Sector 5 / No Field / Geometric Sag / No Geometric Corrections



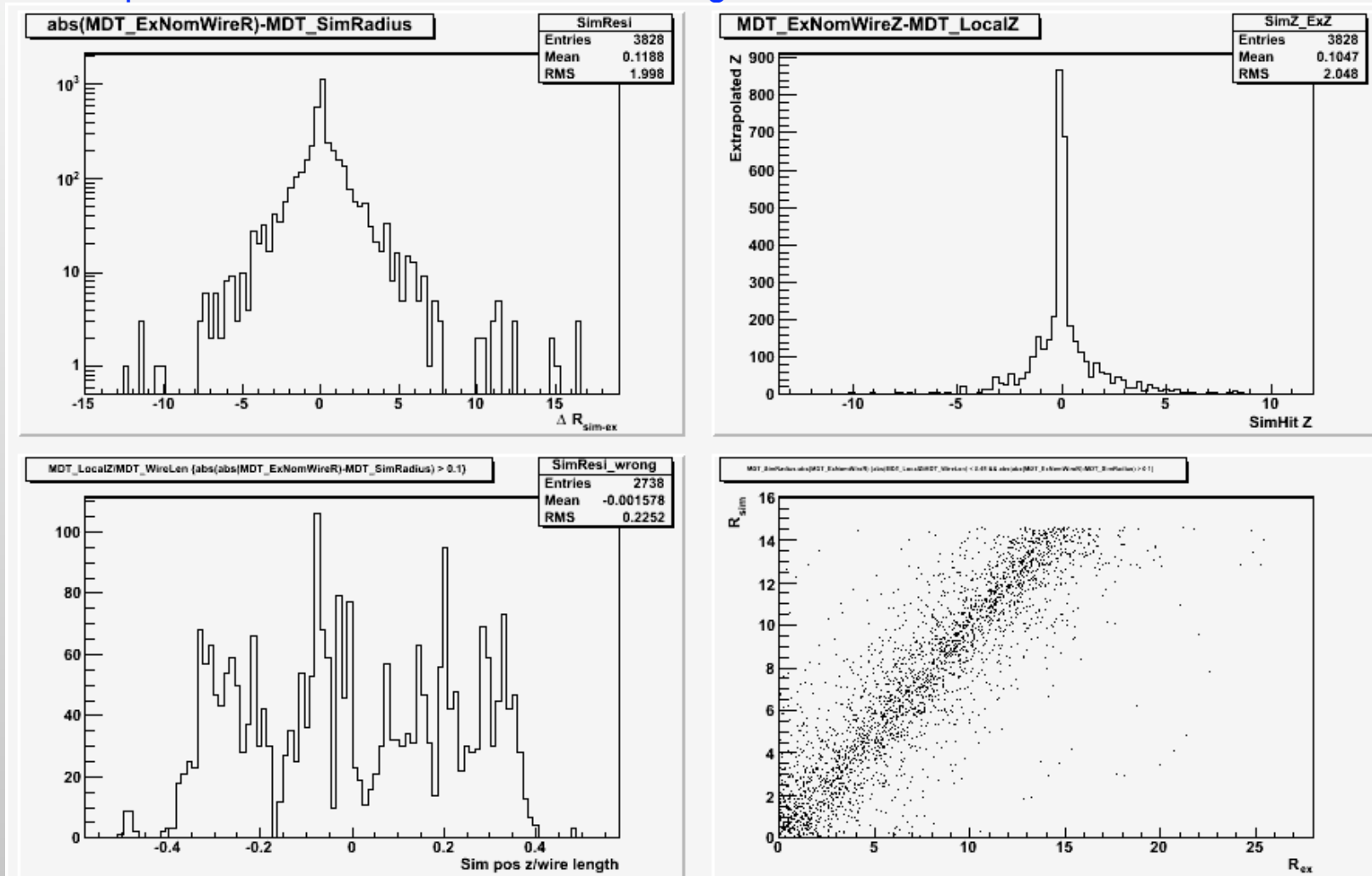
The Plots

Endcap Sector 5 / No Field / Geometric Sag / No Geometric Corrections



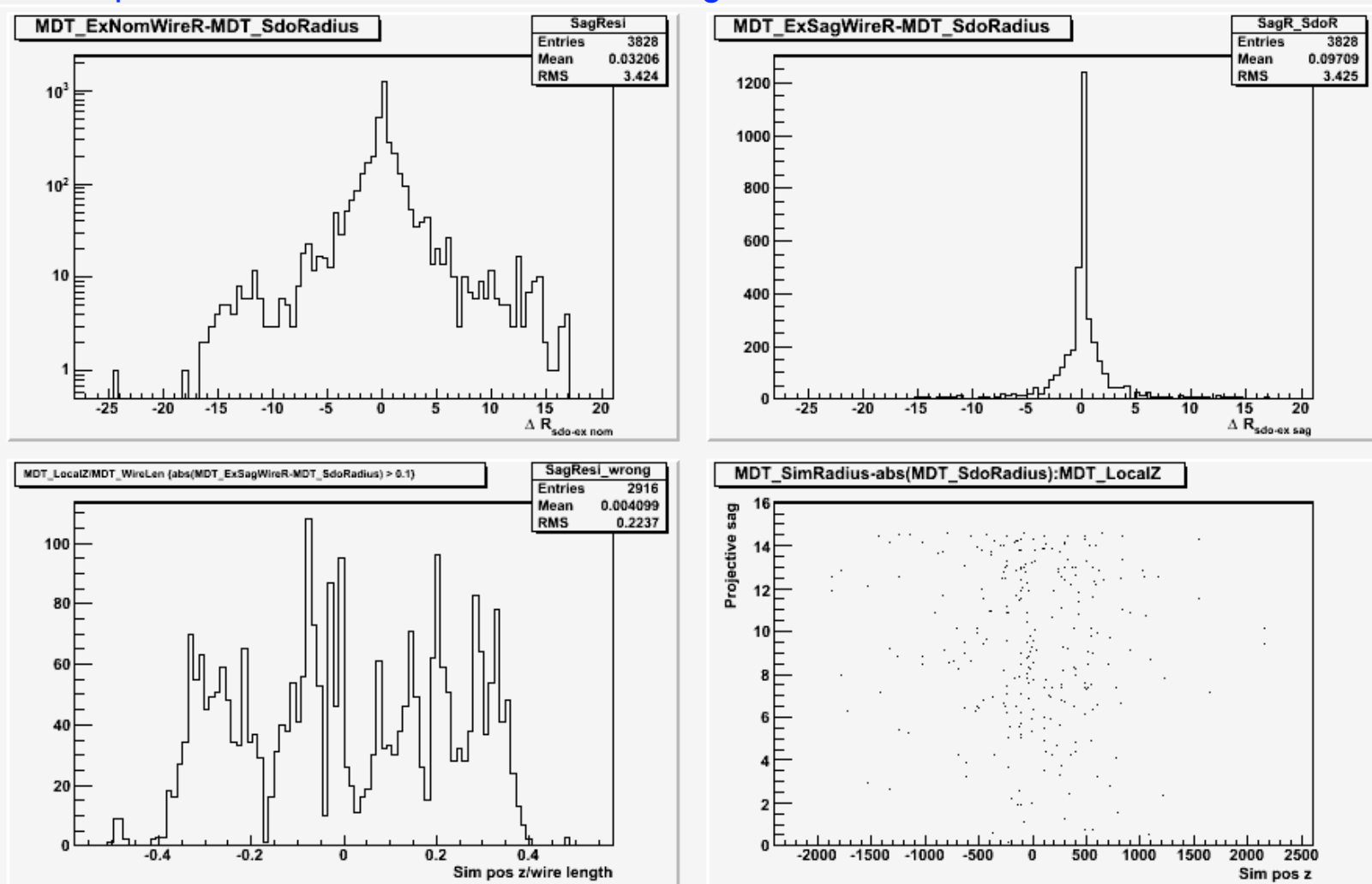
The Plots

Endcap Sector 5 / No Field / Geometric Sag / Geometric Corrections



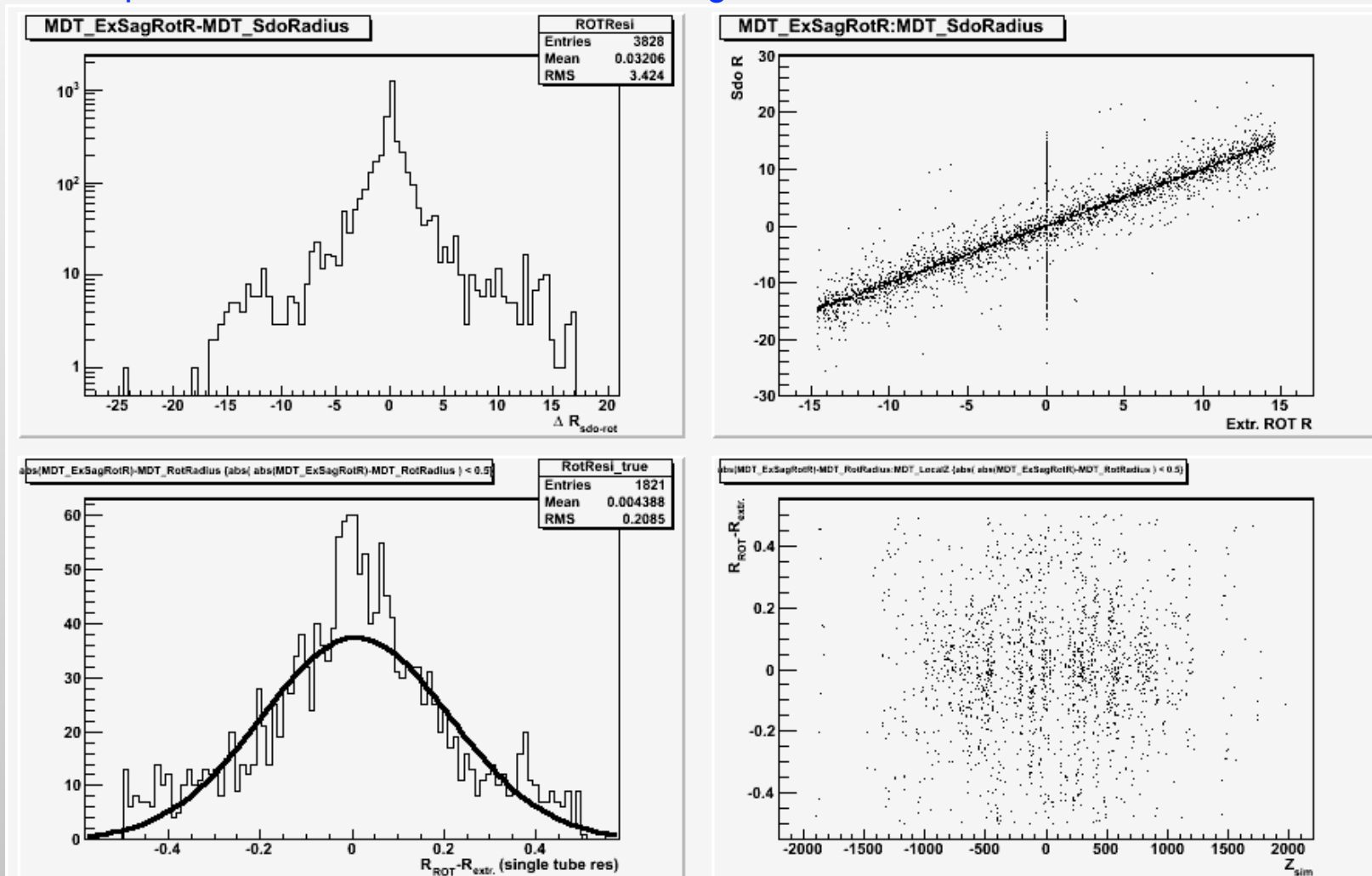
The Plots

Endcap Sector 5 / No Field / Geometric Sag / Geometric Corrections



The Plots

Endcap Sector 5 / No Field / Geometric Sag / Geometric Corrections



Conclusions

Magnetic Field

Plots with field on are garbage

Propagator probably not called

Digitization

No difference with sag effect on or off

Reconstruction

No difference with geometrical corrections on or off