

ACTS study

Variables in tracks ntuple

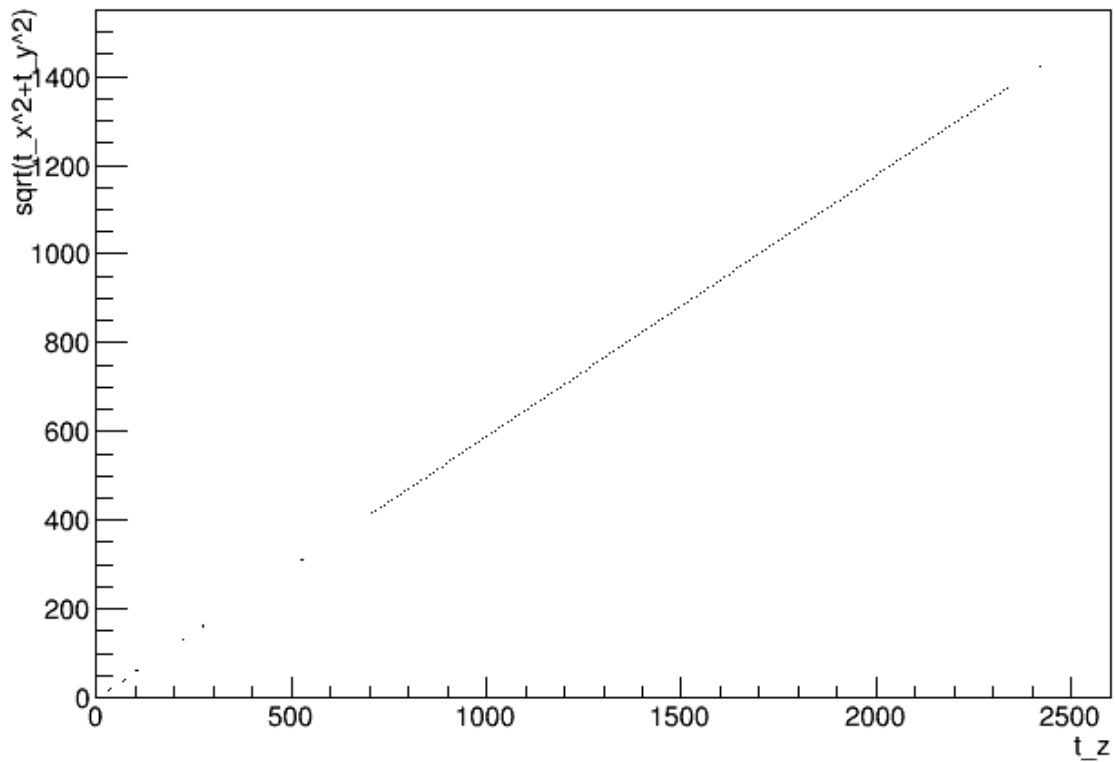
mainly from : `./Io/Root/src/RootTrajectoryWriter.cpp`

branch name	comment
event_nr	the event number
traj_nr	the trajectory number
t_barcode	Truth particle barcode
t_charge	Truth particle charge
t_time	Truth particle time
t_vx	Truth particle vertex x
t_vy	Truth particle vertex y
t_vz	Truth particle vertex z
t_px	Truth particle initial momentum px
t_py	Truth particle initial momentum py
t_pz	Truth particle initial momentum pz
t_theta	Truth particle initial momentum theta
t_phi	Truth particle initial momentum phi
t_eta	Truth particle initial momentum pT
t_pT	Truth particle initial momentum eta
t_D0	truth parameter d0
t_Z0	truth parameter z0
t_PHI	truth parameter phi
t_THETA	truth parameter theta
t_QOP	truth parameter qop
t_x	Global truth hit position x

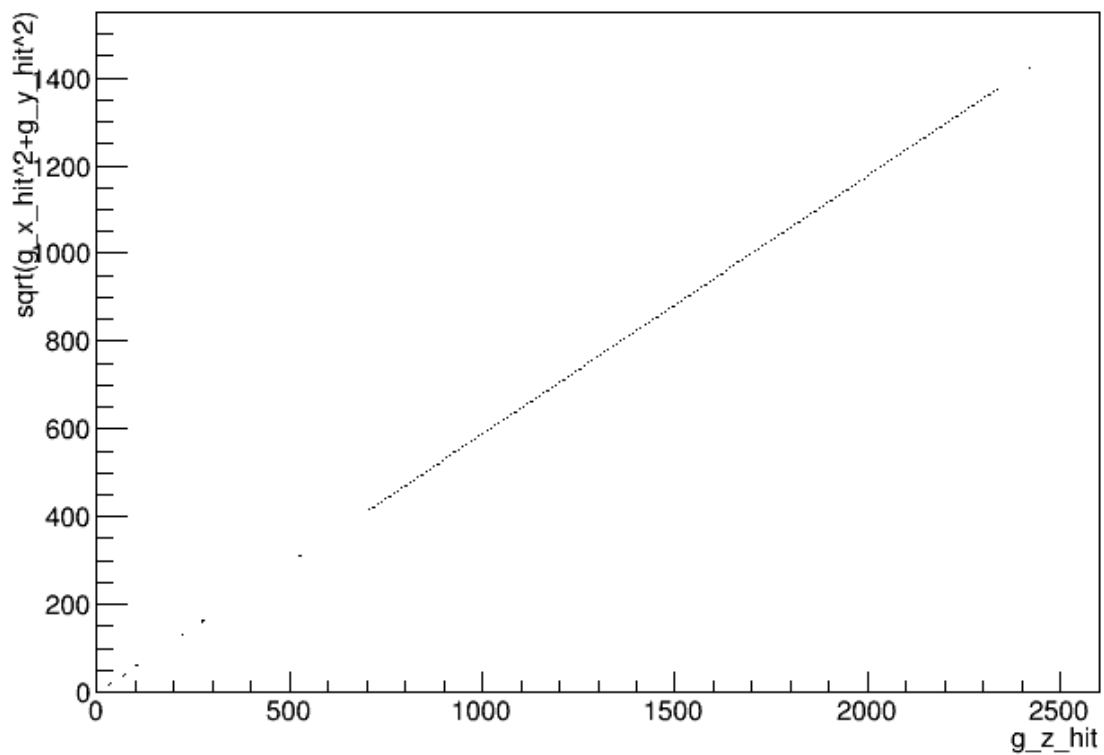
t_y	Global truth hit position y
t_z	Global truth hit position z
t_r	Global truth hit position r
t_dx	Truth particle direction x at global hit position
t_dy	Truth particle direction y at global hit position
t_dz	Truth particle direction z at global hit position
t_eLOC0	truth parameter eLOC_0
t_eLOC1	truth parameter eLOC_1
t_ePHI	truth parameter ePHI
t_eTHETA	truth parameter eTHETA
t_eQOP	truth parameter eQOP
t_eT	truth parameter eT
nStates	number of all states
nMeasurements	number of states with measurements
volume_id	volume identifier
layer_id	layer identifier
module_id	surface identifier
l_x_hit	uncalibrated measurement local x
l_y_hit	uncalibrated measurement local y
g_x_hit	uncalibrated measurement global x
g_y_hit	uncalibrated measurement global y
g_z_hit	uncalibrated measurement global z
res_x_hit	hit residual x
res_y_hit	hit residual y
err_x_hit	hit err x
err_y_hit	hit err y
pull_x_hit	hit pull x

pull_y_hit	hit pull y
dim_hit	dimension of measurement

$\text{sqrt}(t_x^2+t_y^2):t_z$



$\text{sqrt}(g_x_hit^2+g_y_hit^2):g_z_hit$



fitted track parameter	
hasFittedParams	if the track has fitted parameter

eLOC0_fit	fitted parameter eLOC_0
eLOC1_fit	
ePHI_fit	
eTHETA_fit	
eQOP_fit	
eT_fit	
err_eLOC0_fit	parameter eLOC_0 err
err_eLOC1_fit	
err_ePHI_fit	
err_eTHETA_fit	
err_eQOP_fit	
err_eT_fit	
nPredicted	number of states with predicted parameter
predicted	predicted status
eLOC0_prt	predicted parameter eLOC0
eLOC1_prt	
ePHI_prt	
eTHETA_prt	
eQOP_prt	
eT_prt	
res_eLOC0_prt	$eLOC0_prt - t_eLOC0$
res_eLOC1_prt	
res_ePHI_prt	
res_eTHETA_prt	
res_eQOP_prt	
res_eT_prt	
err_eLOC0_prt	predicted parameter eLOC0 error
err_eLOC1_prt	

err_ePHI_prt	
err_eTHETA_prt	
err_eQOP_prt	
err_eT_prt	
pull_eLOC0_prt	predicted parameter eLOC0 pull: residual/error
pull_eLOC1_prt	
pull_ePHI_prt	
pull_eTHETA_prt	
pull_eQOP_prt	
pull_eT_prt	
g_x_prt	predicted global x
g_y_prt	
g_z_prt	
px_prt	predicted momentum px
py_prt	
pz_prt	
eta_prt	
pT_prt	

filtered track parameter	
nFiltered	number of states with filtered parameter
filtered	filtered status
eLOC0_fit	filtered parameter eLOC0
eLOC1_fit	
ePHI_fit	
eTHETA_fit	
eQOP_fit	
eT_fit	

res_eLOC0_fit	filtered parameter eLOC0 residual
res_eLOC1_fit	
res_ePHI_fit	
res_eTHETA_fit	
res_eQOP_fit	
res_eT_fit	
err_eLOC0_fit	filtered parameter eLOC0 error
err_eLOC1_fit	
err_ePHI_fit	
err_eTHETA_fit	
err_eQOP_fit	
err_eT_fit	
pull_eLOC0_fit	
pull_eLOC1_fit	
pull_ePHI_fit	
pull_eTHETA_fit	
pull_eQOP_fit	
pull_eT_fit	
g_x_fit	
g_y_fit	
g_z_fit	
px_fit	
py_fit	
pz_fit	
eta_fit	
pT_fit	
chi2	chisq from filtering

smoothed track parameter	
nSmoothed	number of states with smoothed parameter
smoothed	
eLOC0_smt	
eLOC1_smt	
ePHI_smt	
eTHETA_smt	
eQOP_smt	
eT_smt	
res_eLOC0_smt	
res_eLOC1_smt	
res_ePHI_smt	
res_eTHETA_smt	
res_eQOP_smt	
res_eT_smt	
err_eLOC0_smt	
err_eLOC1_smt	
err_ePHI_smt	
err_eTHETA_smt	
err_eQOP_smt	
err_eT_smt	
pull_eLOC0_smt	
pull_eLOC1_smt	
pull_ePHI_smt	
pull_eTHETA_smt	
pull_eQOP_smt	
pull_eT_smt	
g_x_smt	

g_y_smt	
g_z_smt	
px_smt	
py_smt	
pz_smt	
eta_smt	
pT_smt	