Topological Cluster Variables

Event Header			
Variable Name		Type	Comment
RunNumber;		*Int_t*	run number
EventNumber;		*Int_t*	event number
StreamESD_ref;		*Char_t*	ESD file reference
StreamRDO_ref;		*Char_t*	RDO file reference
Token[153];		*Char_t*	n/a

Uncalibrated TopoClusters	Calibrated TopoClusters		
Variable Name	Variable Name	Type	Comment
cl_ecluster_rawtopo;	*cl_ecluster_caltopo;*	*Float_t*	total cluster energy sum in event
cl_nc_rawtopo;	*cl_nc_caltopo;*	*Int_t*	number of topo-clusters in tuple
cl_nctotal_rawtopo;	*cl_nctotal_caltopo;*	*Int_t*	total number of topo-clusters
cl_e_rawtopo;	*cl_e_caltopo;*	*vector<float>**	cluster energy
cl_et_rawtopo;	*cl_et_caltopo;*	*vector<float>**	tranverse energy
cl_eta_rawtopo;	*cl_eta_caltopo;*	*vector<float>**	cluster pseudorapidity
cl_phi_rawtopo;	*cl_phi_caltopo;*	*vector<float>**	cluster azimuth
cl_ntotcells_rawtopo;	*cl_ntotcells_caltopo;*	*vector<long>**	# cells in cluster
cl_reco_stat_rawtopo;	*cl_reco_stat_caltopo;*	*vector<long>**	cluster reconstruction status
cl_eemb0_rawtopo;	*cl_eemb0_caltopo;*	*vector<float>**	energy in barrel pre-sampler
cl_eemb1_rawtopo;	*cl_eemb1_caltopo;*	*vector<float>**	energy in barrel sampling 1
cl_eemb2_rawtopo;	*cl_eemb2_caltopo;*	*vector<float>**	energy in barrel sampling 2
cl_eemb3_rawtopo;	*cl_eemb3_caltopo;*	*vector<float>**	energy in barrel sampling 3
cl_eeme0_rawtopo;	*cl_eeme0_caltopo;*	*vector<float>**	energy in endcap pre-sampler
cl_eeme1_rawtopo;	*cl_eeme1_caltopo;*	*vector<float>**	energy in endcap sampling 1
cl_eeme2_rawtopo;	*cl_eeme2_caltopo;*	*vector<float>**	energy in endcap sampling 2
cl_eeme3_rawtopo;	*cl_eeme3_caltopo;*	*vector<float>**	energy in endcap sampling 3
cl_efcal0_rawtopo;	*cl_efcal0_caltopo;*	*vector<float>**	energy in electromagnetic forward calorimeter
cl_efcal1_rawtopo;	*cl_efcal1_caltopo;*	*vector<float>**	energy in hadronic forward calorimeter sampling 1
cl_efcal2_rawtopo;	*cl_efcal2_caltopo;*	*vector<float>**	energy in hadronic forward calorimeter sampling 2
cl_ehec0_rawtopo;	*cl_ehec0_caltopo;*	*vector<float>**	energy in hadronic endcap sampling 0
cl_ehec1_rawtopo;	*cl_ehec1_caltopo;*	*vector<float>**	energy in hadronic endcap sampling 1
cl_ehec2_rawtopo;	*cl_ehec2_caltopo;*	*vector<float>**	energy in hadronic endcap sampling 2
cl_ehec3_rawtopo;	*cl_ehec3_caltopo;*	*vector<float>**	energy in hadronic endcap sampling 3
cl_eta0_rawtopo;	*cl_eta0_caltopo;*	*vector<float>**	pseudo-rapidity in barrel pre-sampler
cl_eta1_rawtopo;	*cl_eta1_caltopo;*	*vector<float>**	pseudo-rapidity in barrel sampling 1
cl_eta2_rawtopo;	*cl_eta2_caltopo;*	*vector<float>**	pseudo-rapidity in barrel sampling 2
cl_eta3_rawtopo;	*cl_eta3_caltopo;*	*vector<float>**	pseudo-rapidity in barrel sampling 3
cl_nemb0_rawtopo;	*cl_nemb0_caltopo;*	*vector<long>**	# cells in barrel pre-sampler
cl_nemb1_rawtopo;	*cl_nemb1_caltopo;*	*vector<long>**	# cells in barrel sampling 1
cl_nemb2_rawtopo;	*cl_nemb2_caltopo;*	*vector<long>**	# cells in barrel sampling 2
cl_nemb3_rawtopo;	*cl_nemb3_caltopo;*	*vector<long>**	# cells in barrel sampling 3
cl_neme0_rawtopo;	*cl_neme0_caltopo;*	*vector<long>**	# cells in endcap pre-sampler
cl_neme1_rawtopo;	*cl_neme1_caltopo;*	*vector<long>**	# cells in endcap sampling 1
cl_neme2_rawtopo;	*cl_neme2_caltopo;*	*vector<long>**	# cells in endcap sampling 2
cl_neme3_rawtopo;	*cl_neme3_caltopo;*	*vector<long>**	# cells in endcap sampling 3
cl_nfcal0_rawtopo;	*cl_nfcal0_caltopo;*	*vector<long>**	# cells in electromagnetic forward calorimeter
cl_nfcal1_rawtopo;	*cl_nfcal1_caltopo;*	*vector<long>**	# cells in hadronic forward calorimeter sampling 1
cl_nfcal2_rawtopo;	*cl_nfcal2_caltopo;*	*vector<long>**	# cells in hadronic forward calorimeter sampling 2
cl_nhec0_rawtopo;	*cl_nhec0_caltopo;*	*vector<long>**	# cells in hadronic endcap sampling 0
cl_nhec1_rawtopo;	*cl_nhec1_caltopo;*	*vector<long>**	# cells in hadronic endcap sampling 1
cl_nhec2_rawtopo;	*cl_nhec2_caltopo;*	*vector<long>**	# cells in hadronic endcap sampling 2
cl_nhec3_rawtopo;	*cl_nhec3_caltopo;*	*vector<long>**	# cells in hadronic endcap sampling 3
cl_phi2_rawtopo;	*cl_phi2_caltopo;*	*vector<float>**	azimuth in barrel sampling 2

Evt

Evt

Cluster Kinematic

Cluster Variables in Lar Calorimeter

Peter Loch
University of Arizona

Topological Cluster Variables

Uncalibrated TopoClusters	Calibrated TopoClusters			
Variable Name	Variable Name	Type	Comment	
cl_etileb0_rawtopo;	cl_etileb0_caltopo;	vector<float>*	energy in tile barrel sampling 0	Cluster Variables in Tile Calorimeter
cl_etileb1_rawtopo;	cl_etileb1_caltopo;	vector<float>*	energy in tile barrel sampling 1	
cl_etileb2_rawtopo;	cl_etileb2_caltopo;	vector<float>*	energy in tile barrel sampling 2	
cl_etilee0_rawtopo;	cl_etilee0_caltopo;	vector<float>*	energy in extended tile sampling 0	
cl_etilee1_rawtopo;	cl_etilee1_caltopo;	vector<float>*	energy in extended tile sampling 1	
cl_etilee2_rawtopo;	cl_etilee2_caltopo;	vector<float>*	energy in extended tile sampling 2	
cl_etileg1_rawtopo;	cl_etileg1_caltopo;	vector<float>*	energy in tile sampling 1	
cl_etileg2_rawtopo;	cl_etileg2_caltopo;	vector<float>*	energy in tile sampling 2	
cl_etileg3_rawtopo;	cl_etileg3_caltopo;	vector<float>*	energy in tile sampling 3	
cl_ntileb0_rawtopo;	cl_ntileb0_caltopo;	vector<long>*	# cells in tile barrel sampling 0	
cl_ntileb1_rawtopo;	cl_ntileb1_caltopo;	vector<long>*	# cells in tile barrel sampling 1	
cl_ntileb2_rawtopo;	cl_ntileb2_caltopo;	vector<long>*	# cells in tile barrel sampling 2	
cl_ntilee0_rawtopo;	cl_ntilee0_caltopo;	vector<long>*	# cells in extended tile sampling 0	
cl_ntilee1_rawtopo;	cl_ntilee1_caltopo;	vector<long>*	# cells in extended tile sampling 1	
cl_ntilee2_rawtopo;	cl_ntilee2_caltopo;	vector<long>*	# cells in extended tile sampling 2	
cl_ntileg1_rawtopo;	cl_ntileg1_caltopo;	vector<long>*	# cells in tile gap sampling 1	
cl_ntileg2_rawtopo;	cl_ntileg2_caltopo;	vector<long>*	# cells in tile gap sampling 2	
cl_ntileg3_rawtopo;	cl_ntileg3_caltopo;	vector<long>*	# cells in tile gap sampling 3	
cl_center_lambda_rawtopo;	cl_center_lambda_caltopo;	vector<float>*	central cluster depth in calorimeter	Cluster Moments (Shapes)
cl_center_x_rawtopo;	cl_center_x_caltopo;	vector<float>*	barycenter x	
cl_center_y_rawtopo;	cl_center_y_caltopo;	vector<float>*	barycenter y	
cl_center_z_rawtopo;	cl_center_z_caltopo;	vector<float>*	barycenter z	
cl_delta_alpha_rawtopo;	cl_delta_alpha_caltopo;	vector<float>*	angular distance principal axis-vertex direction	
cl_delta_phi_rawtopo;	cl_delta_phi_caltopo;	vector<float>*	azimuthal distance principal axis-vertex direction	
cl_delta_theta_rawtopo;	cl_delta_theta_caltopo;	vector<float>*	polar distance principal axis-vertex direction	
cl_eng_frac_core_rawtopo;	cl_eng_frac_core_caltopo;	vector<float>*	energy fraction of cluster core	
cl_eng_frac_em_rawtopo;	cl_eng_frac_em_caltopo;	vector<float>*	energy fraction in electromagnetic calorimeter	
cl_eng_frac_max_rawtopo;	cl_eng_frac_max_caltopo;	vector<float>*	energy fraction of cell with maximum signal	
cl_lateral_rawtopo;	cl_lateral_caltopo;	vector<float>*	normalized lateral spread	
cl_longitudinal_rawtopo;	cl_longitudinal_caltopo;	vector<float>*	normalized longitudinal spread	
cl_m1_dens_rawtopo;	cl_m1_dens_caltopo;	vector<float>*	first moment energy density	
cl_m1_eta_rawtopo;	cl_m1_eta_caltopo;	vector<float>*	pseudorapidity first moment	
cl_m1_phi_rawtopo;	cl_m1_phi_caltopo;	vector<float>*	azimuth first moment	
cl_m2_dens_rawtopo;	cl_m2_dens_caltopo;	vector<float>*	second moment energy density	
cl_m2_lambda_rawtopo;	cl_m2_lambda_caltopo;	vector<float>*	second longitudinal moment	
cl_m2_r_rawtopo;	cl_m2_r_caltopo;	vector<float>*	second radial moment	

Peter Loch
University of Arizona