ZDC - Shuttle & DAs

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ZDC DAs status



2 DAQ DAs validated for the ZDC:

ZDCPEDESTALda.cxx

- takes data from dedicated pedestal runs and calculates the parameters needed to subtract pedestal values from the ADC spectra
- succesfully tested with commissioning and FDR data
- test data files provided to DAQ team (no feedback until now)
- ➡ ZDCEMDda.cxx ⇒ only in AA collisions!!!
 - process data from events where EM dissociation of nuclei occurs. The peak due to single-neutron (proton) emission provide the energy calibration coefficient for the neutron (proton) calorimeter
 - it will be modified to add a procedure for the relative calibration of each ZDC sector (the algorithm has already been implemented and tested)

1 DA (not yet committed) that provide parameters to reconstruct centrality variables (b, N_{part}) from E_{ZDC} in AA collisions ⇒ only in AA collisions!!!







AliZDCPreprocessor

details about the Process method shown during last July Offline week

→ the preprocessor returns 0 if run successfully, a value \neq 0 for failed storage

DCS FXS ♦process DCS data
 ♦ produces an alignment object for each run, with info about the vertical position of the 4 hadronic calorimeters

DAQ FXS ♦ process the ascii output files written by the DAs
 ⇒ process data for the following 3 RUN types:

"STANDALONE_PEDESTAL" ⇒real data "STANDALONE EMD"

"PHYSICS"

◆ store of a calibration object depending on the RUN type: "STANDALONE_PEDESTAL" ⇒ AliZDCPedestals object "STANDALONE_EMD" ⇒ AliZDCCalib object ⇒ only in AA collisions!!! "DHXSICS" ⇒ AliZDCPeeDerem object ⇒ only in AA collisions!!!

"PHYSICS" ⇒ AliZDCRecParam object ⇒ only in AA collisions!!!

ZDC preprocessor succesfully tested for in the SHUTTLE test setup

Run#	Run type	First seen	Last seen	SHUTTLE	Е	ZDC
6355	STANDALONE_EMD	today 01:32	today 01:32	Done h		Done (1) <u>h</u>
6354	STANDALONE_PEDESTAL	today 01:32	today 01:32	Done h		<u>Done (1) h</u>





ESD data needed for 2nd pass reconstruction:

the energy calibrated signal for each PMT of the hadronic ZDCs (5 signal x 4 detectors x 2 gain chains of the ADC = 40 values)

Double32_t	fZN1TowerEnergy[5];	11	reco	Е	in	5	ZN1	sectors	-	high	gain	chain
Double32_t	fZN2TowerEnergy[5];	11	reco	Е	in	5	ZN2	sectors	-	high	gain	chain
Double32_t	fZP1TowerEnergy[5];	11	reco	Е	in	5	ZP1	sectors	-	high	gain	chain
Double32_t	fZP2TowerEnergy[5];	11	reco	Е	in	5	ZP2	sectors	-	high	gain	chain
Double32_t	fZN1TowerEnergyLR[5];	11	reco	Е	in	5	ZN1	sectors	-	low	gain	chain
Double32_t	fZN2TowerEnergyLR[5];	11	reco	Е	in	5	ZN2	sectors	-	low	gain	chain
Double32_t	<pre>fZP1TowerEnergyLR[5];</pre>	//	reco	Е	in	5	ZP1	sectors	-	low	gain	chain
Double32_t	<pre>fZP2TowerEnergyLR[5];</pre>	//	reco	Е	in	5	ZP2	sectors	-	low	gain	chain

TO DO...

⇒ find a way to provide energy and relative sector calibration in pp runs and then implement it in the framework (DA + ZDC preprocessor)

⇒ finalize the reconstruction algorithm before committing the DA needed for AA PHYSICS run

