RICH Data Base

http://pcswams.ciemat.es:10080/phpMyAdmin

Status of the DB

5 Tables

- Position: geometry and B field
- Pmt: properties of PMT and ASIC (Grenoble)
- Channels: results of the calibration (Grenoble)
- Kaptons: geometry and Pk Time
- HV lines: geometry and HV

Position

	Field	Type	Collation
☐	**Position**	int(11)	
☐	**X**	float	
☐	**Y**	float	
☐	**Bx**	float	
☐	**By**	float	
☐	**Bz**	float	
☐	**Shield_thick**	float	

pmt

	Field	Type	Collation
☐	**Position**	int(11)	
☐	**PMT**	int(11)	
☐	**ASIC**	int(11)	
☐	**PeakingTime**	float	
☐	**Slope**	float	
☐	**Gain_800**	float	
☐	**Sigma_800**	float	
☐	**D_Gain**	float	
☐	**id_dallas**	char(16)	latin1_swedish_ci

Channels

	Field	Type	Collation
☐	**channel_id**	int(11)	
☐	**Position**	int(11)	
☐	**Gain_800**	float	
☐	**Sigma_800**	float	
☐	**G5_G1**	float	
☐	**Slope**	float	
☐	**Pedestal**	float	
☐	**Sig_ped**	float	

Kaptons

	Field	Type
☐	kapton_id	int(11)
☐	type	int(11)
☐	position1	int(11)
☐	position2	int(11)
☐	position3	int(11)
☐	position4	int(11)
☐	position5	int(11)
☐	position6	int(11)
☐	position7	int(11)
☐	position8	int(11)
☐	position9	int(11)
☐	Pk_time	int(11)
☐	orienta	float
☐	cdp_id	int(11)
☐	link1	int(11)
☐	link2	int(11)

HV liness

	Field	Type
☐	HV_id	int(11)
☐	position1	int(11)
☐	position2	int(11)
☐	position3	int(11)
☐	position4	int(11)
☐	position5	int(11)
☐	position6	int(11)
☐	voltage	float
☐	pp_id	int(11)
☐	hvb_id	int(11)

Upgrade

- More dynamic structure

  The 5 current tables used for:
  - ❑ Calibration validation
  - ❑ Storage area of geometrical information used in the assembly but not directly read.

- From now on, the DB will be used mainly by simulation and reconstruction.

- The data structure must be defined by the software needs and capacities.

Upgrade

- New fields in existent tables. For ex. PMT efficiency in pmt table
- Introduction of data from successive calibrations (monitoring of gain, pedestal position, noise, etc…) . New tables
- New reference values from more recent calibration than Grenoble measurements. New table
- Inclusion of aerogel properties (characteristics and type of the tile). New tables
- Inclusion of structural data (relative position of grids, expansion distance, etc…). New table
- Introduction of mirror reflectivity measurements. New table

Data from successive calibrations

TABLE 1: Run info

An entry for Run

	Field	Type
☐	Run_id	int(11)
☐	DateTime	char(15)
☐	Nevents	int(11)
☐	RunType	char(10)
☐	DataType	char(10)
☐	Setup	int(10)
☐	HVtype	char(10)
☐	TempMean	float
☐	TempMin	float
☐	TempMax	float
☐	Analysis_ver	char(10)

TABLE 2: Channel info

An entry for channel x Run

	Field	Type
☐	Run_id	int(11)
☐	Channel_id	int(11)
☐	Pedestalx5	float
☐	Sigma_pedx5	float
☐	Pedestalx1	float
☐	Sigma_pedx1	float
☐	Occupancy	float
☐	Gainx5	float
☐	Sigma_gainx5	float
☐	Nphe	float

New reference values from calibration

- Created automatically from calibration table (the quality of the data should be checked)
- Data from current tables (PMT and ASIC basic characteristics) could also included.
- This table and the previous one need an extra effort on design.

Aerogel properties

" **TABLE 1: Aerogel tiles**

Fields: Tile-label / Type / Position

Transmittance

" **TABLE 2: Thickness**

Fields: Tile-label

x() / Y() / thickness()

" **TABLE 3: Refractive index**

Fields: Tile-label

x() / Y() / refractive index()

Schedule

- Aerogel assembly (June-July) is expected to use the information of each tile included previously in the DB (very short term).

- The tables corresponding to the pmt data used by the software should be designed carefully (at longer term).