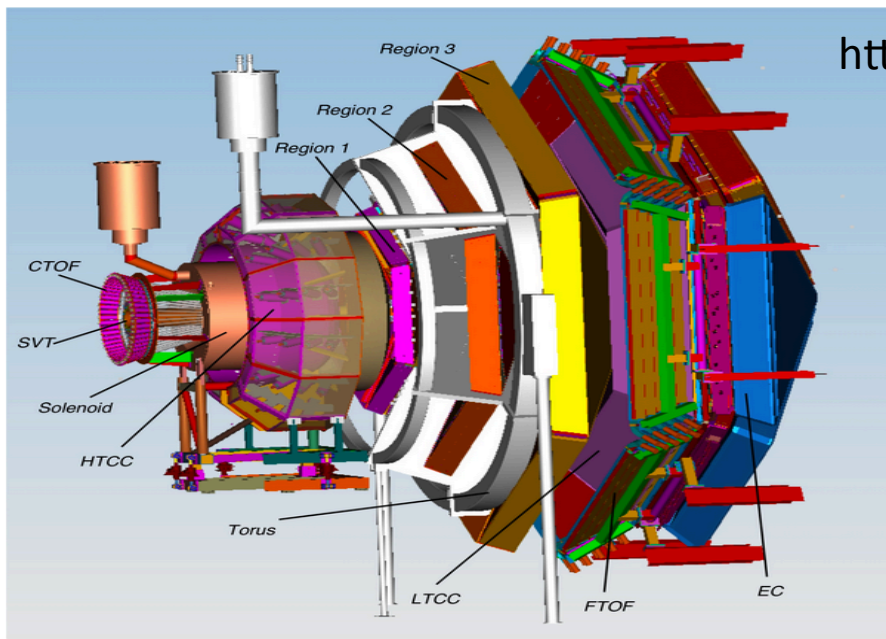


CLAS12 databases

H. Avakian

CLAS Collaboration Meeting, June 13

1. Clas12 databases(ccdb/rcdb)
2. Accessing clasdb
3. Policies for clas12 dbases
 - ccdb
 - rcdb
4. Summary



https://clasweb.jlab.org/wiki/index.php/CLAS12_Wiki

[Link to CLAS \(6 GeV\) Wiki](#)

[Link to CALCOM Wiki](#)

[Link to CLAS12 Operations Documentation](#)

Physics

- Physics Experiments

Deep Processes

- Deep Processes Working Group

Hadron Spectroscopy

- Hadron Spectroscopy Working Group

Nuclear Physics

- Nuclear Physics Working Group

Common Analysis Tools

- Analysis Committee of Experts

CLAS12 Run Groups

- Run Group A

Hardware

- Detector Subsystems Hardware
- Safety and Quality Assurance Procedures
 - Technical Control Board
 - Engineering and Design
 - Safety and Quality Assurance Procedures
 - CLAS12 Longitudinally polarized H and D target

Baseline Equipment

- Beamline
- Silicon Vertex Tracker (SVT)
- Central Time-of-Flight (CTOF)
- Torus
- Solenoid
- Torus and Solenoid Field Maps

Software

General

- Software Documentation Page
- Software (on/offline) **OLD!**
- JLab's GitHub home page
- CLAS12 SVN Repository
- Software FAQs
- Forums
- CLAS Offline Software CVS to SVN Transition
- CLARA: The CLAS12 Analysis and Reconstruction Framework
- CLAS12 Constants Database (ccdb)
- CLAS12 Online Database (rcdb)
- CLAS12 Software Workshops

https://clasweb.jlab.org/wiki/index.php/CLAS12_Constants_Database

https://clasweb.jlab.org/wiki/index.php/CLAS12_Run_Condition_Database ← mirrors clasdb1 (S. Boyarinov)

Development: D. Romanov

CC support: M. Wise, S. White

Hall-B: H. Avagyan

served by a MySQL server on clasdb.jlab.org

Some policies with ccdb/rcdb

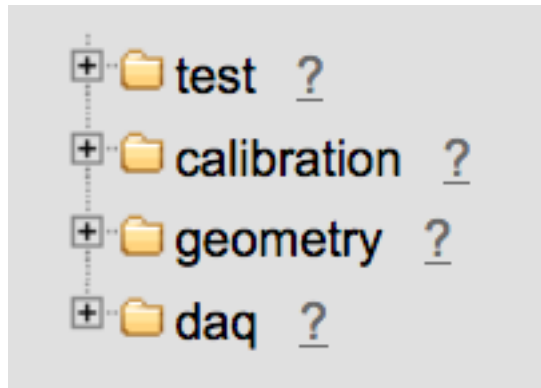
- Simulation and reconstruction programs should use sets of geometry, calibration constants and online info from ccdb/rcdb ONLY!
- Production cooking use run group “frozen” variations from ccdb (under development)
- The run information from online provided by the offline mirror of the online rcdb
- Database access programs should be from official ccdb/rcdb library of programs (API).
- Monitoring of integrity of constant sets → rungroup responsibility

Policies of “who can write what and where” not enforced yet.

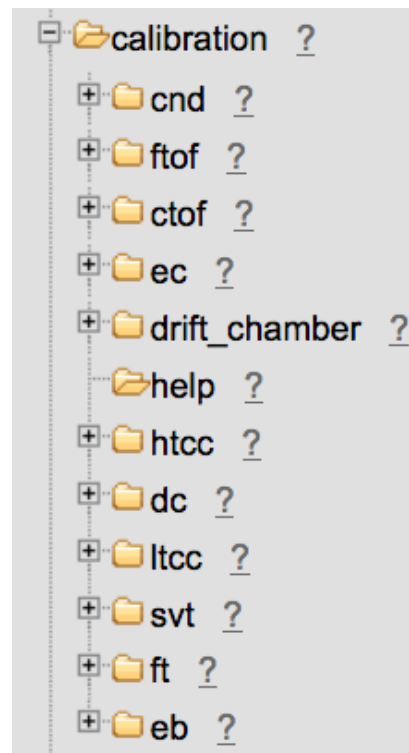
Basic Information about the CLAS12 Constants Database

mysql server host: clasdb.jlab.org ccdb (calibration constants database)
user: clas12reader
database: clas12
web viewer: <https://clasweb.jlab.org/ccdb>

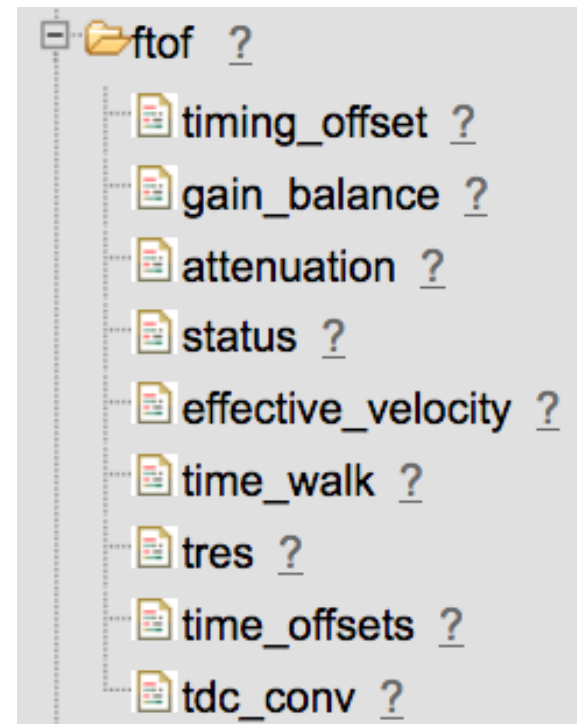
Directory
structure (level 0)



structure (level 1)



structure (level 2)



https://clasweb.jlab.org/wiki/index.php/CLAS12_Constants_Database

ccdb: wish list

- [Java - API](#) for CLAS12 Calibration database
- ex. from clas6:monitoring tools

Caldb Viewer

System	Subsystem	Item
DC_DOCA	t_max	Sector1

RunIndexTable	Date	Runno
RunIndex	2037-1-1	29000

Constants

Date	Run Min	Run Max
2037-1-1	14000	28000

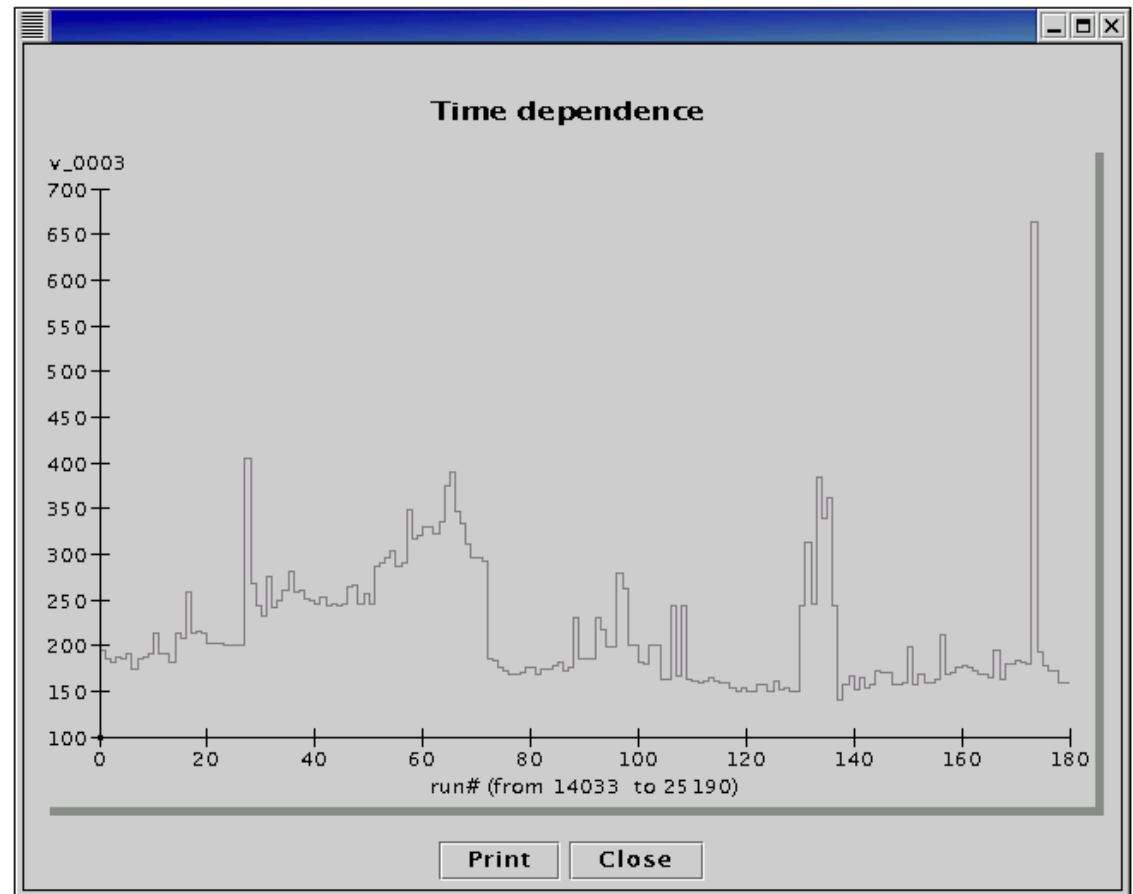
Channels

Channel 3

Time Graph Difference

166	Run	23300	194.04
167	Run	23318	163.04
168	Run	23320	180.04
169	Run	23321	180.04
170	Run	23322	184.04
171	Run	23323	182.04
172	Run	23329	179.04
173	Run	23441	663.04
174	Run	23445	192.04
175	Run	23459	177.04
176	Run	24027	173.04
177	Run	24037	173.04
178	Run	24088	159.4
179	Run	25190	159.4

Exit



Accessing sets from different sources

New feature: Calibration dbase may be accessed from a stand alone copy (sqlite)

/group/clas12/ccdb/ccdb_sqlite/ccdb_2017-06-07.sqlite (Daily created)

Change connection variable from mysql to sqlite

CCDB_CONNECTION

MySQL : mysql://clas12reader@clasdb/ccdb

SQLite : sqlite:///CCDB_HOME/sql/ccdb.sqlite

RCDB_CONNECTION

MySQL : mysql://rcdb@clasdb/rcdb

SQLite : sqlite:///group/clas12/rcdb/example.db

Sqlite (standalone copy of constants) provides new possibilities for debugging.

CLAS12 Run Condition Database

https://clasweb.jlab.org/wiki/index.php/CLAS12_Run_Condition_Database

- The official CLAS12 Run Condition Database, named "**rcdb**", is served by a **MySQL server** on the clone system **clondb1** (maintained by S. Boyarinov) with a mirror on **clasdb.jlab.org** (consist of pairs of condition/value for a given run)

RCDB code available at github: <https://github.com/JeffersonLab/rcdb>

APIs: Python(python version>2.7), C++(requires C++11) , JAVA (in development)

The interfaces available are:

- Web site
- Command line interface (CLI)
- Python API
- C++ API
- Possibly JAVA API

The command line tool rcnd, allows to see RCDB **conditions** and write values:

```
rcnd -c mysql://rcdb@clasdb/rcdb 810 beam_energy 6.423
```

a simple example of a python script is available at
/group/clas12/rcdb/python/clas-
example_select_runs_by_event_count.py

a simple example of a C++ code
/group/clas12/rcdb/cpp/examples/simple.cpp

```
[clas12@ifarm1402:rcdb] rcnd -c mysql://rcdb@clasdb/rcdb --list
beam_current (float) - Beam current
beam_energy (float) - Beam Energy
daq_comment (string) - DAQ comment
daq_trigger (string) - Trigger file
events_rate (float) - Daq events rate
event_count (int) - Number of events in run
is_valid_run_end (bool) - True if a run has valid run-end record.
json_cnd (json) - Basic run info
run_end_time (time) - Run end time
run_start_time (time) - Run start time
status (int) - Run Status
target_position (float) - Target position
temperature (int) - Temperature of the Sun
test (float) - Beam test
torus_scale (float) - Torus scale factor
```

Policy: Write from online to clondb1 server, read in offline from clasdb

Changes (status, run quality,...) only by rcdb manager

RCDB web interface available at <https://clasweb.jlab.org/rcdb>

Home - RCDB

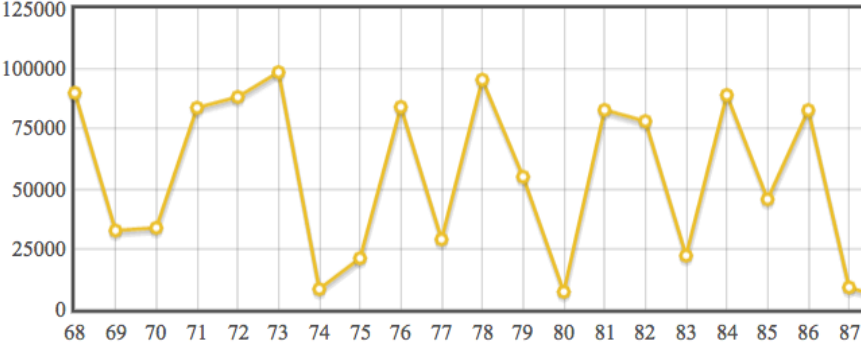
https://clasweb.jlab.org/rcdb

Most Visited wg.jlab clas12offline CLAS-12 Docs ROOT User's Guid... github IT MIS-T

RCDB Home Runs Conditions Run or min-max Query

Run min 0 Run max inf Search query event_count>10000 ... (ctrl+space f

Home



Last 25 runs

Number	Start time	Length	Ev
999	2016-02-04 02:30:38	1:54:32	-1
810	None		1000

Files

All conditions

Filter conditions... Q

Name	Value
beam_current	4.5
beam_energy	6.423
daq_comment	prod
daq_trigger	sector2_SVT
event_count	1000
status	1
target_position	10.505
torus_scale	-0.5

< 809 999 >

summary

Calibration (ccdb) and run condition (rcdb) databases are currently the only official source for CLAS12 constants and online info for offline analysis

For more efficient usage of clas12 ccdb/rcdb need:

- implement reading of rcdb info in analysis chain for gemc->reconstruction.
- development of API (JAVA,C++ for rcdb)
- finalize policies (more software development to implement)
- develop constant set integrity monitoring script (detector experts)

- support slides

Writing/cooking policies

a given system
structure

x		y		z
---	--	---	--	---

calibration data

input

1		0		0
---	--	---	--	---

1		1		0
---	--	---	--	---

1		1		1
---	--	---	--	---

assignments

run range: 100-200 variation default

run range: 100-200 variation TOF-A

run range: 100-200 variation TOF-B

run range: 100-200 variation TOF-B

run range: 100-200 variation RunGroup-A
--

locked variations created in cddb

Make official cooks only from dedicated database (ex. RunGroup-A)
with official version

ccdb commands: filling tables

Calibration Constants Data Base
(CCDB) command line tools.

Available commands:

(command)	(name)	(description):
add		add data

ex. fill numbers in the table test/rich0/tiles from a text file
tiles.txt

```
1 t1 1.0 2.0 3.0
2 t2 4.0 5.0 6.0
3 t3 7.0 8.0 9.0
```

```
ccdb -c mysql://clas12writer:geom3try@clasdb/clas12 add test/rich0/tiles tiles.txt
```

Filling numbers with new numbers for a mc “variation”

```
ccdb -c mysql://clas12writer:geom3try@clasdb/clas12 -v mc add test/rich0/tiles teles1.txt
```

```
ccdb -c mysql://clas12writer:geom3try@clasdb/clas12 -v mc cat test/rich0/tiles
```

```
ifarm1102:t>ccdb -c mysql://clas12writer:geom3try@clasdb/clas12 -v mc cat test/rich0/tiles0
```

id	name	r0	r1	r2
int	string	double	double	double
1	t1	1.1	2.1	3.1
2	t2	4.1	5.1	6.1
3	t3	7.1	8.1	9.1

Directory structure

```
avakian@ifarm1401> mysql -h clasdb -u clas12reader clas12 -e "show tables"
```

```
+-----+  
| Tables_in_clas12 |  
+-----+  
| assignments      |  
| columns           |  
| constantSets     |  
| directories       |  
| eventRanges       |  
| logs              |  
| runRanges         |  
| schemaVersions    |  
| tags              |  
| typeTables        |  
| users             |  
| variations        |  
| variations_has_tags |
```

what goes where

Info on tables stored in mySQL table typeTables

```
ifarm1401:t>mysql -h clasdb -u clas12reader clas12 -e "select * from typeTables where directoryId=42"
```

id	created	modified	directoryId	name	nRows	nColumns	nAssignments	authorId	comment
108	2015-11-04 17:05:05	2015-11-04 17:05:05	42	tiles	400	5	0	3	
109	2015-11-04 17:45:52	2015-11-04 17:45:52	42	tiles0	3	5	0	3	

Corresponding info on columns for table stored in mySQL table colums

```
ifarm1401:t>mysql -h clasdb -u clas12reader clas12 -e "select * from columns where typeId=109"
```

id	created	modified	name	typeId	columnType	order	comment
640	2015-11-04 17:45:53	2015-11-04 17:45:53	id	109	int	0	NULL
641	2015-11-04 17:45:53	2015-11-04 17:45:53	name	109	string	1	NULL
642	2015-11-04 17:45:53	2015-11-04 17:45:53	r0	109	double	2	NULL
643	2015-11-04 17:45:53	2015-11-04 17:45:53	r1	109	double	3	NULL
644	2015-11-04 17:45:53	2015-11-04 17:45:53	r2	109	double	4	NULL

constants for a given table stored in mySQL table constantSets

```
ifarm1401:t>mysql -h clasdb -u clas12reader clas12 -e "select * from constantSets where constantTypeId=109"
```

id	created	modified	vault	constantTypeId
121	2015-11-04 17:47:54	2015-11-04 17:47:54	1 t1 1.0 2.0 3.0 2 t2 4.0 5.0 6.0 3 t3 7.0 8.0 9.0	109
122	2015-11-04 17:54:15	2015-11-04 17:54:15	1 t1 1.1 2.1 3.1 2 t2 4.1 5.1 6.1 3 t3 7.1 8.1 9.1	109
123	2015-11-04 17:56:29	2015-11-04 17:56:29	1 t1 1.2 2.2 3.2 2 t2 4.2 5.2 6.2 3 t3 7.2 8.2 9.2	109

what goes where

constants for a given table stored in mySQL table constantSets

```
ifarm1401:t>mysql -h clasdb -u clas12reader clas12 -e "select * from constantSets where constantTypeId=109"
```

id	created	modified	vault	constantTypeId
121	2015-11-04 17:47:54	2015-11-04 17:47:54	1 t 1 1.0 2.0 3.0 2 t 4.0 5.0 6.0 3 t 7.0 8.0 9.0	109
122	2015-11-04 17:54:15	2015-11-04 17:54:15	1 t 1 1.1 2.1 3.1 2 t 4.1 5.1 6.1 3 t 7.1 8.1 9.1	109
123	2015-11-04 17:56:29	2015-11-04 17:56:29	1 t 1 1.2 2.2 3.2 2 t 4.2 5.2 6.2 3 t 7.2 8.2 9.2	109

constants for a given table stored in mySQL table assignments

```
ifarm1401:t>mysql -h clasdb -u clas12reader clas12 -e "select * from assignments where constantSetId>120"
```

id	created	modified	variationId	runRangeId	eventRangeId	constantSetId	authorId	comment
121	2015-11-04 17:47:54	2015-11-04 17:47:54	1	1	NULL	121	3	
122	2015-11-04 17:54:15	2015-11-04 17:54:15	2	1	NULL	122	3	
123	2015-11-04 17:56:29	2015-11-04 17:56:29	1	1	NULL	123	3	

variation ID points to record in mySQL table variations

```
ifarm1401:t>mysql -h clasdb -u clas12reader clas12 -e "select * from variations"
```

id	created	modified	name	description	authorId	comment	parentId
1	2015-03-13 11:51:15	2015-03-13 11:51:15	default	Default variation	2	Default variation	0
2	2015-03-13 11:51:15	2015-03-13 11:51:15	mc	Mone-Carlo variations	2	Monte-Carlo specific variation	1
3	2015-03-13 11:51:15	2015-03-13 11:51:15	test	Test variation	2	Variation for software test	1
4	2015-03-13 11:51:15	2015-03-13 11:51:15	subtest	Test variation of second level	2	Variation for software test which has test variation as parent	3
5	2015-03-13 11:51:24	2015-03-13 11:51:24	bst_var1	NULL	1	module 1 aligned with x.	1

```
mysql> select id,created,modified,constantTypeId from constantSets;
```

id	created	modified	constantTypeId
1	2012-07-30 23:48:42	2012-07-30 23:48:42	1
2	2012-08-30 23:48:42	2012-08-30 23:48:42	1
3	2012-09-30 23:48:42	2012-09-30 23:48:42	2
4	2012-10-30 23:48:42	2012-10-30 23:48:42	1
5	2012-11-30 23:48:43	2012-11-30 23:48:43	1
6	2013-03-29 10:22:07	2013-03-29 10:22:07	3
7	2013-03-29 10:22:08	2013-03-29 10:22:08	4
8	2013-03-29 10:22:10	2013-03-29 10:22:10	5
9	2013-03-29 10:22:12	2013-03-29 10:22:12	6
10	2013-03-29 10:22:14	2013-03-29 10:22:14	7
11	2013-03-29 10:22:15	2013-03-29 10:22:15	8
12	2013-03-29 10:22:17	2013-03-29 10:22:17	9
38	2013-08-12 15:08:25	2013-08-12 15:08:25	38
68	2014-04-11 16:08:20	2014-04-11 16:08:20	61
39	2013-08-12 15:09:47	2013-08-12 15:09:47	39
30	2013-06-26 10:48:48	2013-06-26 10:48:48	7
61	2014-03-04 10:59:01	2014-03-04 10:59:01	48
62	2014-03-12 12:12:37	2014-03-12 12:12:37	50
37	2013-08-12 15:07:12	2013-08-12 15:07:12	37
70	2014-04-11 16:08:24	2014-04-11 16:08:24	63
60	2014-03-04 10:33:11	2014-03-04 10:33:11	1
71	2014-04-15 13:59:55	2014-04-15 13:59:55	64
72	2014-04-15 15:07:54	2014-04-15 15:07:54	61
73	2014-04-16 13:43:59	2014-04-16 13:43:59	63
52	2013-08-27 11:39:45	2013-08-27 11:39:45	7
53	2013-08-29 11:18:44	2013-08-29 11:18:44	8
84	2014-06-09 11:51:53	2014-06-09 11:51:53	78
85	2014-06-09 11:52:02	2014-06-09 11:52:02	77
86	2014-06-09 11:52:11	2014-06-09 11:52:11	79
87	2014-06-17 14:24:36	2014-06-17 14:24:36	84
83	2014-06-09 11:44:57	2014-06-09 11:44:57	74
88	2014-06-17 14:25:24	2014-06-17 14:25:24	80
89	2014-06-17 14:25:37	2014-06-17 14:25:37	82
90	2014-06-17 14:25:48	2014-06-17 14:25:48	83
91	2014-06-17 14:26:04	2014-06-17 14:26:04	85
92	2014-06-17 15:35:10	2014-06-17 15:35:10	86
93	2014-06-17 15:35:15	2014-06-17 15:35:15	87
94	2014-06-17 15:35:21	2014-06-17 15:35:21	88
95	2014-07-08 10:43:55	2014-07-08 10:43:55	89
96	2014-07-08 10:52:00	2014-07-08 10:52:00	90
97	2014-07-08 10:57:17	2014-07-08 10:57:17	91
98	2014-07-08 10:57:27	2014-07-08 10:57:27	92
99	2014-07-25 14:45:48	2014-07-25 14:45:48	94
100	2014-07-28 11:46:07	2014-07-28 11:46:07	96
101	2014-07-28 11:53:19	2014-07-28 11:53:19	97
102	2014-10-16 16:23:29	2014-10-16 16:23:29	99
103	2014-10-28 11:09:58	2014-10-28 11:09:58	101
104	2014-10-28 11:14:47	2014-10-28 11:14:47	105
105	2014-10-29 10:48:53	2014-10-29 10:48:53	103

```
mysql> select id,variationId,runRangeId,constantSetId,authorId from assignments;
```

id	variationId	runRangeId	constantSetId	authorId
1	1	1	1	2
2	3	2	2	2
3	3	1	3	2
4	1	1	4	2
5	4	1	5	2
6	1	1	6	1
7	1	1	7	1
8	1	1	8	1
9	1	1	9	1
10	1	1	10	1
11	1	1	11	1
12	1	1	12	1
68	1	1	68	1
39	1	1	39	1
38	1	1	38	1
86	1	1	86	1
71	1	1	71	1
60	4	1	60	1
30	5	1	30	1
62	1	1	62	1
37	1	1	37	1
70	1	1	70	1
72	1	1	72	1
73	1	1	73	1
52	1	1	52	1
53	1	1	53	1
83	1	1	83	1
87	1	1	87	1
84	1	1	84	1
85	1	1	85	1
61	1	1	61	1
88	1	1	88	1
89	1	1	89	1
90	1	1	90	1
91	1	1	91	1
92	1	1	92	1
93	1	1	93	1
94	1	1	94	1
95	1	1	95	1
96	1	1	96	1
97	1	1	97	1
98	1	1	98	1
99	1	1	99	1
100	1	1	100	1
101	1	1	101	1
102	1	1	102	1
103	1	1	103	1
104	1	1	104	1
105	1	1	105	1

```
mysql> select id,name,authorId,parentId from variations;
```

id	name	authorId	parentId
1	default	2	0
2	mc	2	1
3	test	2	1
4	subtest	2	3
5	bst_var1	1	0

5 rows in set (0.00 sec)

```
mysql> select * from runRanges;
```

id	created	modified	name	runMin	runMax
1	2013-03-29 10:22:04	2013-03-29 10:22:04	all	0	2147483647
2	2013-03-29 10:22:04	2013-03-29 10:22:04	test	500	3000
3	2013-03-29 10:22:04	2013-03-29 10:22:04		0	2000


```
mysql> select id,directoryId,name,nRows,nColumns,nAssignments from typeTables;
```

id	directoryId	name	nRows	nColumns	nAssignments
1	3	test_table	2	3	2
2	3	test_table2	1	3	1
3	5	dc	1	2	0
4	5	region	3	9	0
5	5	superlayer	6	8	0
6	5	layer	1	2	0
7	6	region	4	8	0
8	6	sector	1	12	0
9	6	bst	1	3	0
39	11	paddles	5	4	0
38	10	paddles	62	4	0
37	9	paddles	23	4	0
50	8	ftof	1	3	0
64	10	panel	1	8	0
63	11	panel	1	7	0
61	9	panel	1	7	0
78	12	Uview	1	2	0
77	12	Vview	1	2	0
48	1	table2	3	3	0
74	12	pcal	1	15	0
79	12	Wview	1	2	0
80	16	attenuation	540	8	0
82	16	effective_velocity	540	7	0
83	16	gain_balance	540	11	0
84	16	status	540	5	0
85	16	timing_offset	540	5	0
86	17	panel1a	897	8	0
87	17	panel1b	2077	8	0
88	17	panel2	396	8	0
89	20	ec	1	16	0
90	20	uview	1	4	0
91	20	vview	1	3	0
92	20	wview	1	3	0
94	23	ftcal	1	8	0
96	21	cnd	1	5	0
97	21	layer	3	5	0
98	1	cchv	200	2	0
99	25	hvcc_table	48	2	0
100	30	ltcchv	216	4	0
101	29	htcchv	48	4	0
102	33	ltcchv	216	4	0
103	32	htcchv	48	4	0

42 rows in set (0.00 sec)

```
mysql> select id,name,typeId,columnType from columns;
```

id	name	typeId	columnType
1	x	1	double
2	y	1	double
3	z	1	double
4	c1	2	int
5	c2	2	int
6	c3	2	int
7	nsectors	3	NULL
8	nregions	3	NULL
9	region	4	NULL
10	nsuperlayers	4	NULL
11	dist2tgt	4	NULL
12	frontgap	4	NULL
13	midgap	4	NULL
14	backgap	4	NULL
15	thopen	4	NULL
16	thtilt	4	NULL
17	xdist	4	NULL
18	superlayer	5	NULL
19	nsenselayers	5	NULL
20	nguardlayers	5	NULL
21	nfieldlayers	5	NULL
22	thster	5	NULL

```
mysql> select * from directories;
```

id	created	modified	name	parentId	authorId
1	2013-03-29 10:22:04	2013-03-29 10:22:04	test	0	2
2	2013-03-29 10:22:04	2013-03-29 10:22:04	subtest	1	2
3	2013-03-29 10:22:04	2013-03-29 10:22:04	test_vars	1	2
4	2013-03-29 10:22:05	2013-03-29 10:22:05	geometry	0	1
5	2013-03-29 10:22:06	2013-03-29 10:22:06	dc	4	1
6	2013-03-29 10:22:12	2013-03-29 10:22:12	bst	4	1
8	2013-05-17 14:12:47	2013-05-17 14:12:47	ftof	4	1
9	2013-05-17 14:13:03	2013-05-17 14:13:03	panel1a	8	1
10	2013-05-17 14:13:08	2013-05-17 14:13:08	panel1b	8	1
11	2013-05-17 14:13:13	2013-05-17 14:13:13	panel2	8	1
12	2013-10-23 07:40:06	2013-10-23 07:40:06	pcal	4	1
13	2013-12-05 14:12:06	2013-12-05 14:12:06	calibration	0	1
14	2013-12-05 14:12:24	2013-12-05 14:12:24	dc	13	1
15	2014-06-09 10:03:07	2014-06-09 10:03:07	alignment	12	1
16	2014-06-17 10:34:23	2014-06-17 10:34:23	ftof	13	1
17	2014-06-17 13:36:05	2014-06-17 13:36:05	time_walk	16	1
20	2014-07-08 10:43:08	2014-07-08 10:43:08	ec	4	1
21	2014-07-24 16:01:40	2014-07-24 16:01:40	cnd	4	1
23	2014-07-25 14:32:31	2014-07-25 14:32:31	ft	4	1
24	2014-10-16 15:47:05	2014-10-16 15:47:05	cc	1	1
25	2014-10-16 16:00:16	2014-10-16 16:00:16	cchv_markov	1	1
26	2014-10-27 16:54:01	2014-10-27 16:54:01	aaa	25	1
27	2014-10-27 17:04:14	2014-10-27 17:04:14	bbb	25	1
28	2014-10-27 17:45:52	2014-10-27 17:45:52	cc_calib	25	1
29	2014-10-27 17:45:54	2014-10-27 17:45:54	htcc	28	1
30	2014-10-27 17:45:56	2014-10-27 17:45:56	ltcc	28	1
31	2014-10-27 17:48:31	2014-10-27 17:48:31	cc_calib	1	1
32	2014-10-27 17:48:33	2014-10-27 17:48:33	htcc	31	1
33	2014-10-27 17:48:35	2014-10-27 17:48:35	ltcc	31	1

29 rows in set (0.00 sec)

id	created	lastActionTime	name
1	2015-03-13 11:51:15	2015-08-13 09:27:00	anonymous
2	2012-07-15 15:16:30	2012-09-20 08:11:12	test_user
3	2015-05-15 15:45:21	2015-11-04 17:56:29	avakian
4	2015-05-15 15:45:21	2015-05-15 15:45:21	weygand
5	2015-05-15 15:45:21	2015-05-15 15:45:21	shabalin
6	2015-05-15 15:45:21	2015-05-15 15:45:21	azp
7	2015-05-15 15:45:21	2015-05-15 15:45:21	kurbatov
8	2015-05-15 15:45:21	2015-05-15 15:45:21	ungaro
9	2015-05-15 15:45:21	2015-05-15 15:45:21	ziegler
10	2015-05-15 15:45:21	2015-05-15 15:45:21	daria
11	2015-05-15 15:45:21	2015-05-15 15:45:21	lcsmith
12	2015-05-15 15:45:21	2015-05-15 15:45:21	hicks
13	2015-05-15 15:45:21	2015-05-15 15:45:21	stepanya
14	2015-05-15 15:45:21	2015-05-15 15:45:21	gavalian
15	2015-05-15 15:45:21	2015-05-15 15:45:21	gurjyan
16	2015-05-15 15:45:21	2015-05-15 15:45:21	procureu
17	2015-05-15 15:45:21	2015-05-15 15:45:21	puckett
18	2015-05-15 15:45:21	2015-05-15 15:45:21	spaul
19	2015-05-15 15:45:21	2015-05-15 15:45:21	smancill
20	2015-05-15 15:45:21	2015-05-15 15:45:21	goetz
21	2015-05-15 15:45:21	2015-05-15 15:45:21	fatiha
22	2015-05-15 15:45:21	2015-05-15 15:45:21	witchger
23	2015-05-15 15:45:21	2015-05-15 15:45:21	vpk
24	2015-05-15 15:45:21	2015-05-15 15:45:21	rmontgom
25	2015-05-15 15:45:21	2015-05-15 15:45:21	anefalos
26	2015-05-15 15:45:21	2015-05-15 15:45:21	mirazita
27	2015-05-15 15:45:21	2015-05-15 15:45:21	mcontalb
28	2015-05-15 15:45:21	2015-05-15 15:45:21	asryan
29	2015-05-15 15:45:21	2015-05-15 15:45:21	devita
30	2015-05-15 15:45:21	2015-05-15 15:45:21	jruger
31	2015-05-15 15:45:21	2015-05-15 15:45:21	pisanos
32	2015-05-15 15:45:21	2015-05-15 15:45:21	jpond
33	2015-05-15 15:45:21	2015-05-15 15:45:21	acolvill
34	2015-05-15 15:45:21	2015-05-15 15:45:21	skab
35	2015-05-15 15:45:21	2015-05-15 15:45:21	clarausr
36	2015-05-15 15:45:21	2015-05-15 15:45:21	hlu
37	2015-05-15 15:45:21	2015-05-15 15:45:21	heddle
38	2015-05-15 15:45:21	2015-05-15 15:45:21	dpuente
39	2015-05-15 15:45:21	2015-05-15 15:45:21	zana
40	2015-05-15 15:45:21	2015-05-15 15:45:21	wphelps
41	2015-05-15 15:45:21	2015-05-15 15:45:21	gotra
42	2015-05-15 15:45:21	2015-05-15 15:45:21	biselli
43	2015-05-15 15:45:21	2015-05-15 15:45:21	markov
44	2015-05-15 15:45:21	2015-05-15 15:45:21	mboer
45	2015-05-15 15:45:21	2015-05-15 15:45:21	omcortes

list of items

Handling of run ranges (linking set with run range)

ccdb -c mysql://clas12writer:geom3try@clasdb/clas12 -r 9900 add test/rich0/tiles0 teles.dump

```
ifarm1401:t>mysql -h clasdb -u clas12reader clas12 -e "select * from runRanges"
```

id	created	modified	name	runMin	runMax	comment
1	2015-03-13 11:51:15	2015-03-13 11:51:15	all	0	2147483647	Default runrange that covers all runs
2	2015-03-13 11:51:15	2015-03-13 11:51:15	test	500	3000	Test runrange for software tests
3	2015-03-13 11:51:15	2015-03-13 11:51:15		0	2000	Test runrange. Secont test runrange for software test

TODO list

- develop the high level Java-API
- develop the high level C++ API
- finalize database writing policies
- define the variation “lock” procedure
- develop the scripts for ccdb input
-

CLAS12 Calibration Constants

Unique storage of CLAS12 calibration constants is the mysql database **ccdb** (calibration constants database)

https://clasweb.jlab.org/wiki/index.php/CLAS12_Constants_Database

- Policy:**
- use the same set of constants in GEANT simulation (gemc) reconstruction (coatjava), calibration software
 - *lock* the constant set during the “production”

Basic Information about the CLAS12 Constants Database

mysql server host: clasdb.jlab.org
user: clas12reader
database: clas12
web viewer: <https://clasweb.jlab.org/ccdb>

Structure of clas12 db:

calibration constants	←
geometry parameters	←

