Django dashboard and Grid production monitoring for the VO AUGER

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Outlines

- **Virtual Organisation AUGER**
- **Grid production expectations**
- **Monitoring tools**

VO AUGER

- **Created in 2006 by the Czech Auger group in cooperation with CESNET**
- **CESNET provides and maintains central resources**
  - LCG RB, gLite WMS, LB, UI, LFC, registration portal, VOMS server
- **VOMS server replica at FNAL**
- **16 sites from 10 countries support VO AUGER**
- **Currently 45 members**

Grid Utilisation

- **Resources**
  - ca 500 CPU cores
  - ca 100 TB of storage
    - shared with local users at some sites

- **Gridified applications**
  - **CORSIKA** at every Auger site
    - > 42k showers
    - > 483k hours (not normalised)
  - **Auger Offline** at 4 sites
    - > 116k shower analysis tasks
    - > 110k hours (not normalised)

Production Expectations

- **Production Team: very few people**
  - Currently ~3, in the near future ~ 1
- **500-1000 concurrent jobs**
- **Production framework**
  - Easy submission of a bunch of jobs
  - Simple distinction of successful and failed jobs
  - Easy resubmission of affected jobs
  - Deliver simulation/analysis results to users (physicsist)
  - Easy extension of a production task

Production Monitoring

- **Sucessful vs. failed jobs**
  - gLite: (“Done (Success)” vs. “Aborted” or “Done (Failed)”)
  - Job stdout/stderr log parser

- **Production Dashboard**

  http://auger.farm.particle.cz/auger_dashboard/
  - Python application
  - Based on the django Web framework

    http://www.djangoproject.com/
  - MySQL database
    - django runs with MySQL, SQLite3, PostgreSQL, Oracle
  - Portability

Dashboard Features

- **Extensible application**
  - New griddified application => add a new python model
- **World-wide accessibility**
  - Web browser application
  - Password protected
- **User access to physics data produced on Grid**
  - List of LFNs
- **Administration interface**
  - User groups with different roles
  - Easy extension/addition of existing objects
  - ACLs to objects (add, modify, view, delete)

Dashboard for Users 1

[Home | Shower download | Dashboard | Recent jobs | Resubmit | Sites | Scripts | Shifter zone | About...]

Pierre Auger Observatory

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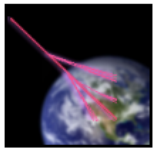
Production dashboard for the Pierre Auger Observatory

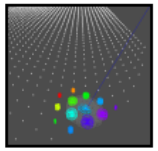
Welcome to the homepage of the Grid production dashboard.

CORSIKA production



- CORSIKA shower browser
- CORSIKA dashboard
- CORSIKA jobs todo

OFFLINE production



- OFFLINE shower browser
- OFFLINE dashboard
- OFFLINE jobs todo

Other information

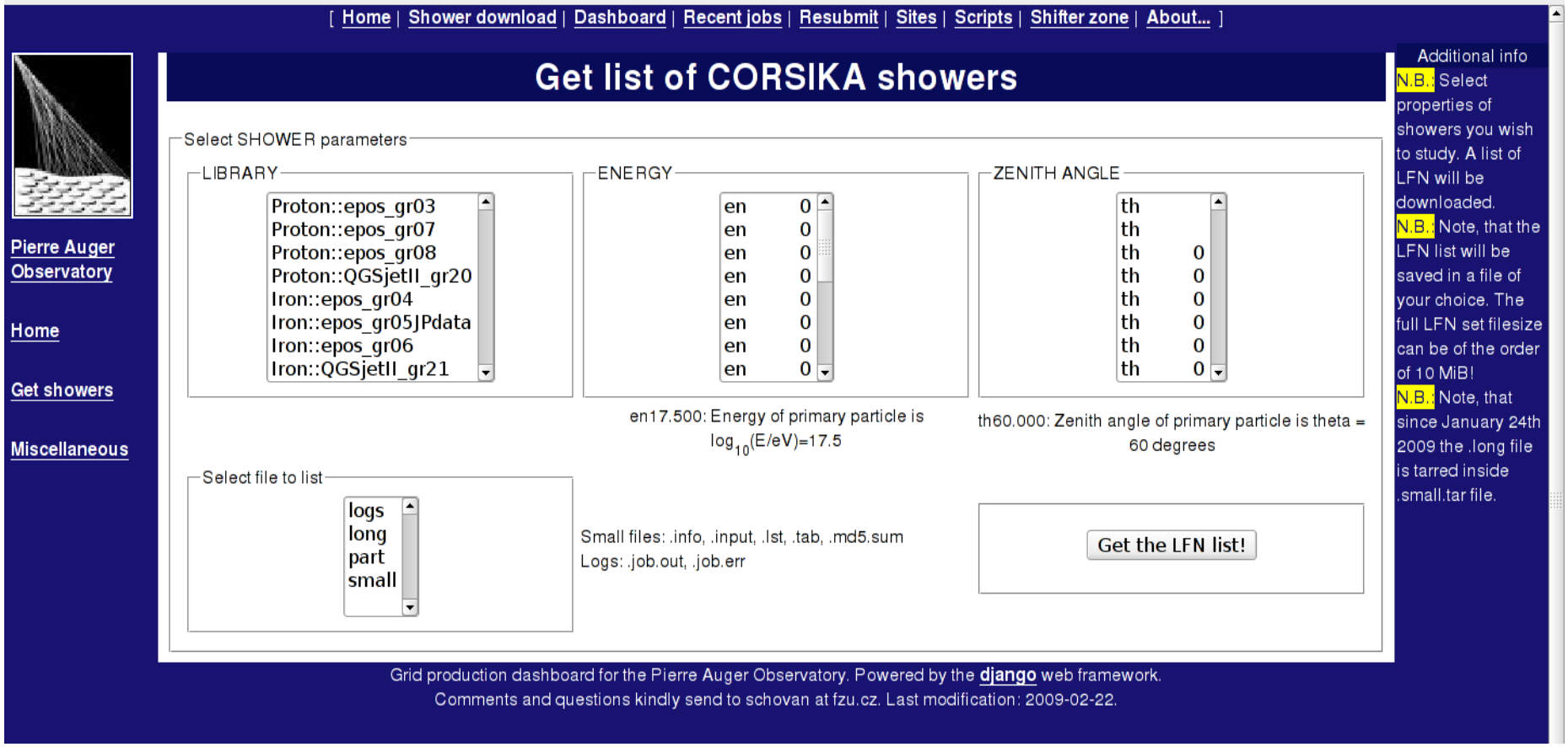
- Virtual Organisation AUGER
- Computational resources
- Script downloads

Shifters zone

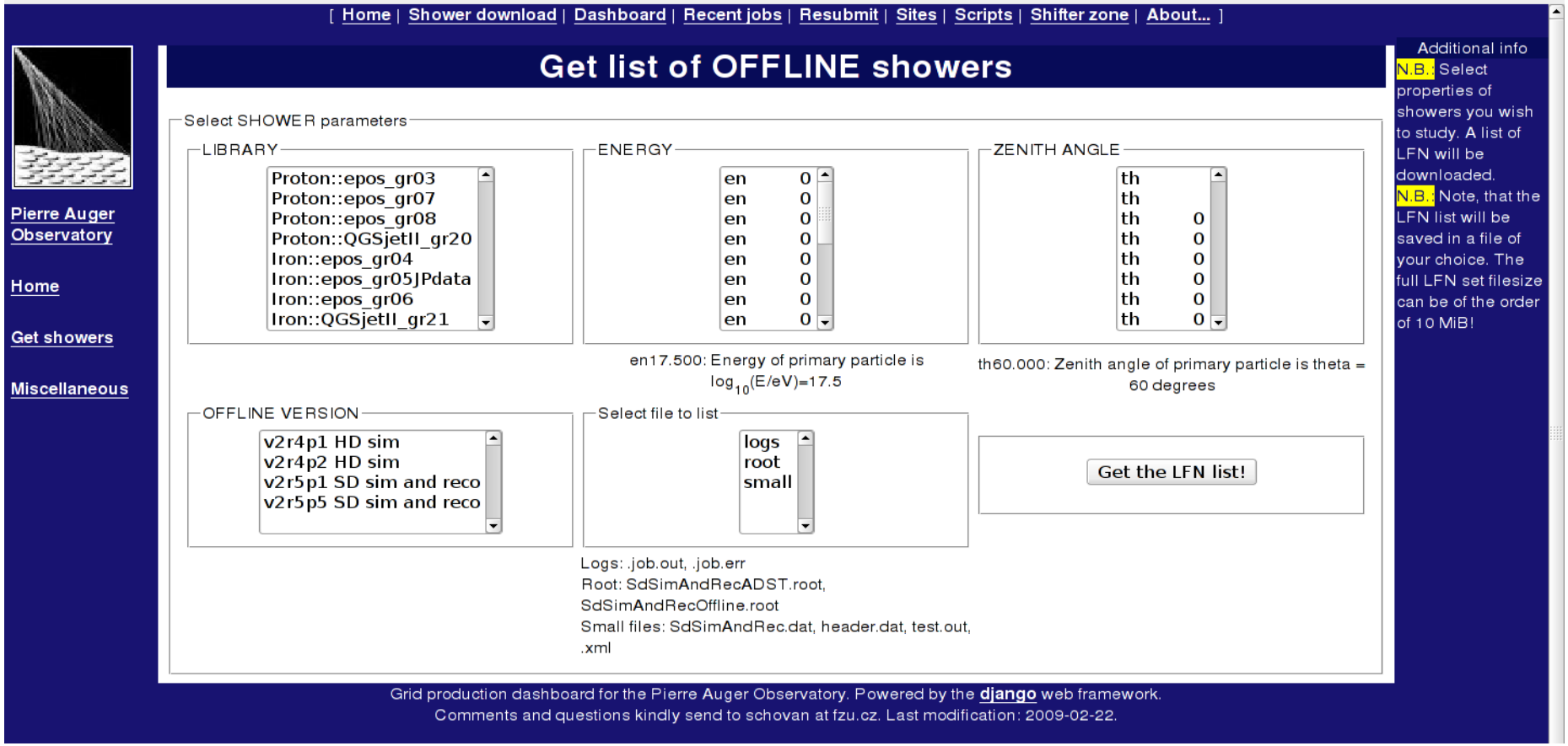
- Recent jobs
- Jobs to resubmit
- Dashboard Admin

Grid production dashboard for the Pierre Auger Observatory. Powered by the django web framework.
Comments and questions kindly send to schovan at fzu.cz. Last modification: 2009-02-22.

Dashboard for Users 2



Dashboard for Users 3



Dashboard for Users 4

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Miscellaneous information about the Grid produciton

Virtual Organisation AUGER

The VO AUGER was created in 2006 by the Czech group in cooperation with **CESNET**. CESNET provides and maintains central resources, such as LCG RB, gLite WMS, LB, UI, LFC, registration portal and the VOMS server. At the present time, there are few tens of users registered to the VO AUGER. To become a VO AUGER member, please visit the **VO AUGER registration page**.

Computational resources

VO AUGER simulations made use of many CPUs connected in the EGEE Grid, which enables us to simulate events with higher precision. A **list of involved sites** is provided. The results of simulations have been uploaded and stored on Storage Elements and registered in the LFC, therefore they can be accessed globally by all the VO AUGER members. You can obtain a list of CORSIKA/OFFLINE showers LFNs in the **shower browser**.

Production dashboard

The **Dashboard** is a helpful monitoring tool of the grid production progress. A simple color scheme helps the shifter easily see what is the status of a finished job and chase the failing jobs or sites. Another dashboard feature is a 1-click list of jobs which has to be **resubmitted**. We provide also a list of **recently finished jobs**.

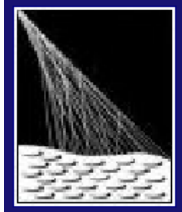
Grid production dashboard for the Pierre Auger Observatory. Powered by the **django** web framework.
Comments and questions kindly send to schovan at fzu.cz. Last modification: 2009-02-22.

Dashboard for Shifters

- DB updated regularly (info from job logs)
- Production summary
- Recent production status
- Color-coded job states
- List jobs to (re)submit
- Administration interface

Dashboard for Shifters 1

[Home | Shower download | Dashboard | Recent jobs | Resubmit | Sites | Scripts | Shifter zone | About...]



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Shifter zone

Production summary

Production summary

Recently finished jobs

Recently finished jobs page: CORSIKA, OFFLINE

Dashboard

Dashboard page: CORSIKA, OFFLINE

Shower browser

Shower browser page: CORSIKA, OFFLINE

Jobs to resubmit

Jobs to resubmit page: CORSIKA, OFFLINE

Scripts

Scripts download page

Admin

Admin page

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CORSIKA production summary

Library	# of jobs in Library		
	done	todo/resubmit	total
epos_gr03::Proton	2782 (99.0 %)	18	2800
epos_gr04::Iron	2766 (99.0 %)	34	2800
epos_gr05JPdata::Iron	516 (92.0 %)	44	560
epos_gr06::Iron	2762 (99.0 %)	38	2800
epos_gr07::Proton	2780 (99.0 %)	20	2800
epos_gr08::Proton	5078 (91.0 %)	522	5600
QGSjetII_gr20::Proton	13934 (100.0 %)	66	14000
QGSjetII_gr21::Iron	11533 (82.0 %)	2467	14000

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Dashboard for Shifters 3

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Recent CORSIKA jobs (T-24hrs)

CORSIKA job

i Job status	Filesize [B] LFN of the PARTICLE file	Particle	Worker node	Job start	CORSIKA start	CORSIKA end Job ID	CORSIKA duration [h]	More info
1	33058376 (.part) (up 0)	Iron	FZU Goliasx104.farm.particle.cz	2009-02-28 06:47:43	2009-02-28 06:48:14	2009-02-28 10:51:58	4.1	...
ok	41408 (.long) (up 1)	lfn:/grid/auger/prod/QGSjetII_gr21/2009/02/25/en17.500/th0.65/DAT115530.part				https_3a_2f_2flb2.egee.cesnet.cz_3a9000_2f4gRn71P2tfBTgnKutlJyUg		
2	50413368 (.part) (up 0)	Iron	FZU Goliasx82.farm.particle.cz	2009-02-28 00:47:22	2009-02-28 00:47:51	2009-02-28 10:21:34	9.6	...
ok	41408 (.long) (up 1)	lfn:/grid/auger/prod/QGSjetII_gr21/2009/02/25/en17.500/th0.65/DAT115611.part				https_3a_2f_2flb2.egee.cesnet.cz_3a9000_2fIKwkTEZlP5kkjkTha5WOYA		
3	63993256 (.part) (up 0)	Iron	FZU Goliasx92.farm.particle.cz	2009-02-28 01:18:00	2009-02-28 01:18:40	2009-02-28 10:19:29	9.0	...
ok	41408 (.long) (up 1)	lfn:/grid/auger/prod/QGSjetII_gr21/2009/02/25/en17.500/th0.65/DAT115511.part				https_3a_2f_2flb2.egee.cesnet.cz_3a9000_2fH0il78_5fMo1mSJDAYoYK0Zg		
4	49050136 (.part) (up 0)	Iron	IJS:f9xxx007.ijs.si	2009-02-28 08:49:10	2009-02-28 08:49:28	2009-02-28 10:15:38	1.4	...
no-fluka-no-channel-selected0 (.long) (up 1)	lfn:/grid/auger/prod/QGSjetII_gr21/2009/02/26/en17.500/th0.65/DAT117838.part				https_3a_2f_2flb2.egee.cesnet.cz_3a9000_2fgZw0gDkGjYuyb2mdkATiVw			
5	241449360 (.part) (up 0)	Iron	FZU Goliasx83.farm.particle.cz	2009-02-28 00:05:50	2009-02-28 00:06:20	2009-02-28 10:07:58	10.0	...
ok	41408 (.long) (up 1)	lfn:/grid/auger/prod/QGSjetII_gr21/2009/02/25/en17.500/th0.65/DAT115558.part				https_3a_2f_2flb2.egee.cesnet.cz_3a9000_2fmoxJ8Zr9m9k629LIl_5foAeA		
6	182410928 (.part) (up 0)	Iron	FZU Goliasx85.farm.particle.cz	2009-02-27 23:53:35	2009-02-27 23:54:03	2009-02-28 08:44:39	8.8	...
ok	41408 (.long) (up 1)	lfn:/grid/auger/prod/QGSjetII_gr21/2009/02/25/en17.500/th0.65/DAT115609.part				https_3a_2f_2flb2.egee.cesnet.cz_3a9000_2frSSGfxV4pIbgmbMiTqHSRg		
7	71071576 (.part) (up 0)	Iron	FZU Goliasx104.farm.particle.cz	2009-02-28 02:58:06	2009-02-28 02:58:34	2009-02-28 08:18:52	5.3	...
ok	41408 (.long) (up 1)	lfn:/grid/auger/prod/QGSjetII_gr21/2009/02/25/en17.500/th0.65/DAT115590.part				https_3a_2f_2flb2.egee.cesnet.cz_3a9000_2fJ2omxcajxYriVkIn9Jzclw		
8	151738208 (.part) (up 0)	Iron	FZU Goliasx84.farm.particle.cz	2009-02-27 21:21:02	2009-02-27 21:21:28	2009-02-28 08:15:56	10.9	...
ok	41408 (.long) (up 1)	lfn:/grid/auger/prod/QGSjetII_gr21/2009/02/25/en17.500/th0.65/DAT115550.part				https_3a_2f_2flb2.egee.cesnet.cz_3a9000_2fGZBrnGpjKDPBduFL-zIz_5fQ		
9	206503432 (.part) (up 0)	Iron	FZU Goliasx104.farm.particle.cz	2009-02-28 02:16:22	2009-02-28 02:17:13	2009-02-28 07:26:26	5.2	...
ok	41408 (.long) (up 1)	lfn:/grid/auger/prod/QGSjetII_gr21/2009/02/25/en17.500/th0.65/DAT115527.part				https_3a_2f_2flb2.egee.cesnet.cz_3a9000_2fRj45urRUa48l-bCkxiGygQ		
10	107144792 (.part) (up 0)	Iron	FZU Goliasx104.farm.particle.cz	2009-02-28 03:05:58	2009-02-28 03:06:28	2009-02-28 07:16:49	4.2	...
ok	41408 (.long) (up 1)	lfn:/grid/auger/prod/QGSjetII_gr21/2009/02/25/en17.500/th0.65/DAT115526.part				https_3a_2f_2flb2.egee.cesnet.cz_3a9000_2f9XH6srOMrXHZcyeIjdsXcw		
11	42968024 (.part) (up 0)	Iron	FZU Goliasx81.farm.particle.cz	2009-02-27 23:18:01	2009-02-27 23:18:29	2009-02-28 07:01:14	7.7	...
ok	41408 (.long) (up 1)	lfn:/grid/auger/prod/QGSjetII_gr21/2009/02/25/en17.500/th0.65/DAT115588.part				https_3a_2f_2flb2.egee.cesnet.cz_3a9000_2flMWKyfdyoGd9XJX6o-96A		
12	66903232 (.part) (up 0)	Iron	FZU Goliasx104.farm.particle.cz	2009-02-28 02:30:43	2009-02-28 02:31:23	2009-02-28 06:47:19	4.3	...
ok	41408 (.long) (up 1)	lfn:/grid/auger/prod/QGSjetII_gr21/2009/02/25/en17.500/th0.65/DAT115541.part				https_3a_2f_2flb2.egee.cesnet.cz_3a9000_2fQOdKBXnF4BhIbGcENgxXzg		
13	50072560 (.part) (up 0)	Iron	FZU Goliasx83.farm.particle.cz	2009-02-27 22:30:44	2009-02-27 22:31:09	2009-02-28 06:42:48	8.2	...
ok	41408 (.long) (up 1)	lfn:/grid/auger/prod/QGSjetII_gr21/2009/02/25/en17.500/th0.65/DAT115623.part				https_3a_2f_2flb2.egee.cesnet.cz_3a9000_2fZ8nBA_5fxnzdI8Ny1cMxamXw		
14	24721688 (.part) (up 0)	Iron	FZU Goliasx89.farm.particle.cz	2009-02-27 23:24:48	2009-02-27 23:25:12	2009-02-28 06:23:42	7.0	...
ok	41408 (.long) (up 1)	lfn:/grid/auger/prod/QGSjetII_gr21/2009/02/25/en17.500/th0.65/DAT115538.part				https_3a_2f_2flb2.egee.cesnet.cz_3a9000_2fkmJme0czkqt0AHvltF-o-g		
15	157872752 (.part) (up 0)	Iron	FZU Goliasx29.farm.particle.cz	2009-02-27 19:10:33	2009-02-27 19:11:28	2009-02-28 06:14:26	11.0	...
ok	41408 (.long) (up 1)	lfn:/grid/auger/prod/QGSjetII_gr21/2009/02/25/en17.500/th0.65/DAT115501.part				https_3a_2f_2flb2.egee.cesnet.cz_3a9000_2fF9D_5f_5foJE-liChKr4wt2c3g		
16	24092504 (.part)	Iron	FZU Goliasx93.farm.particle.cz	2009-02-27 22:28:17	2009-02-27	2009-02-28	6.6	...

CORSIKA jobs color scheme

Successful job

Long0

The .long file produced has a zero length.

No fluka channel selected

or

Floating point exception

warning in the CORSIKA standard output file.

Short walltime

Job has been sent to a queue with too short walltime limit.

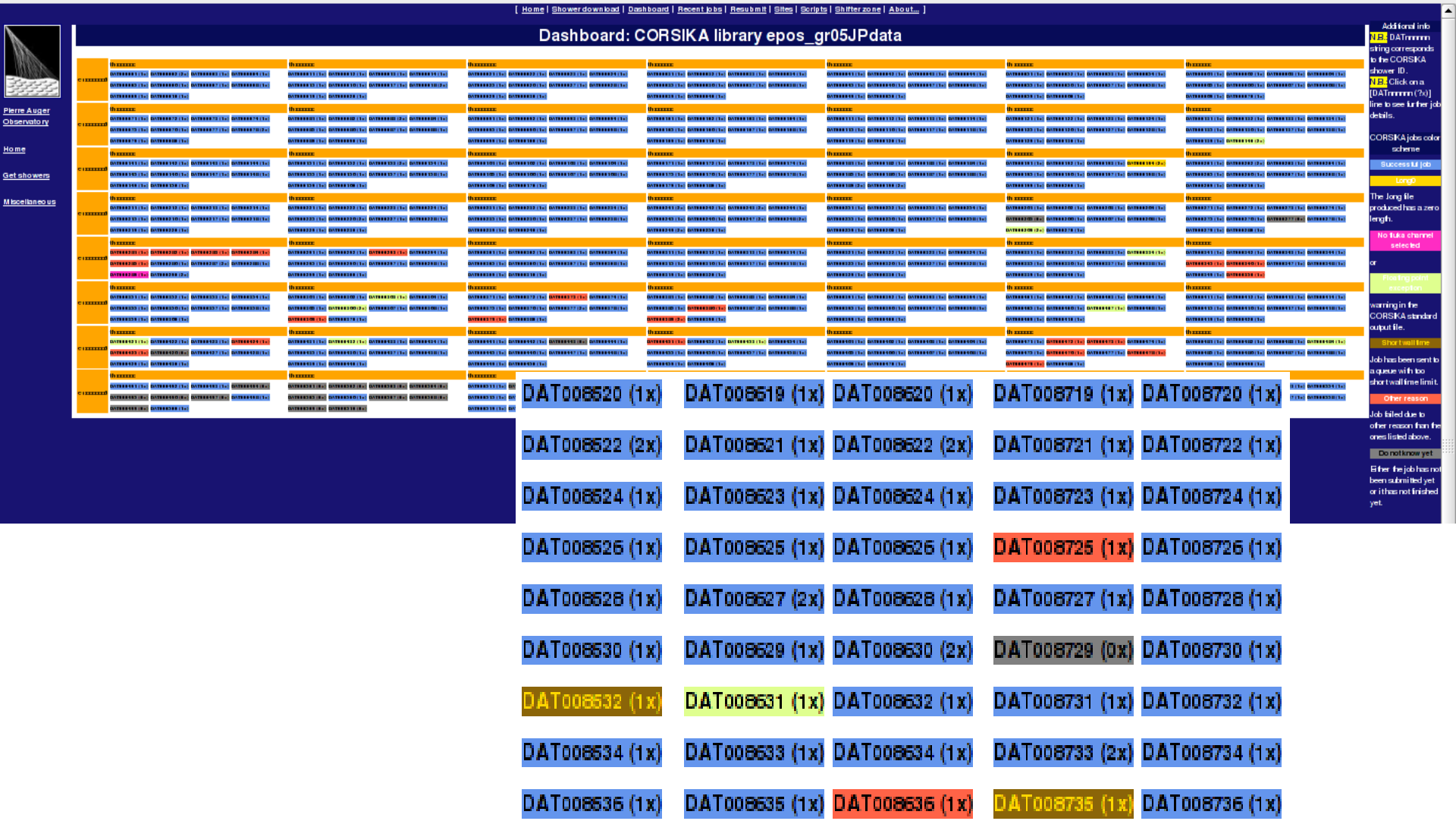
Other reason

Job failed due to other reason than the ones listed above.

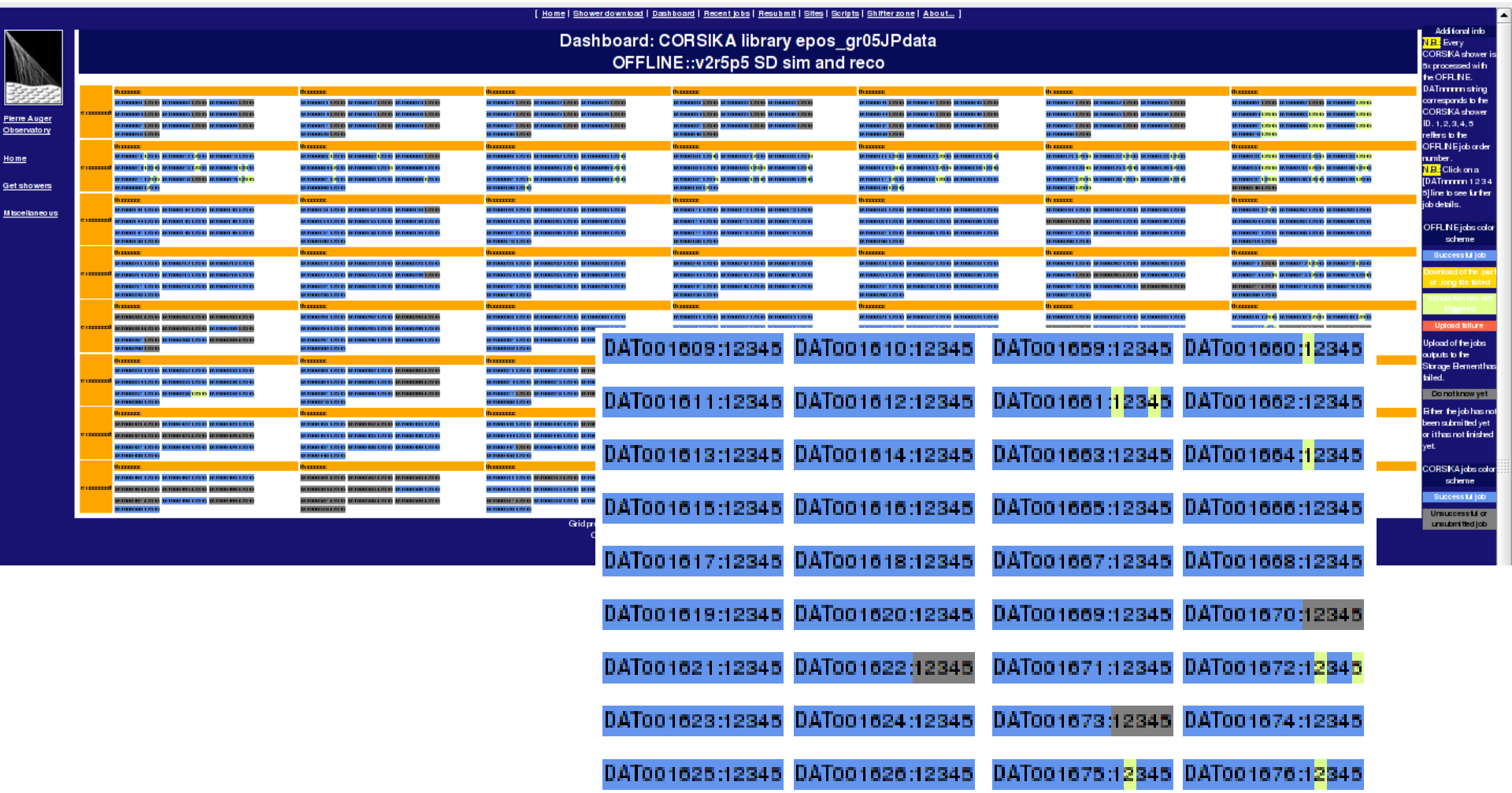
Do not know yet

Either the job has not been submitted yet or it has not finished yet.

Dashboard for Shifters 4



Dashboard for Shifters 5



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CORSIKA job

CORSIKA input: **INIT.epos_gr04_____00006**

i / Job status	Filesize [B]	Particle	Worker node / LFN of the PARTICLE file	Job start	CORSIKA start	CORSIKA end / Job ID	CORSIKA duration [h]
1	849214888 (.part) (up 0)	Iron	FZK Gridka::c01-001-108	2008-04-25 22:30:38	2008-04-25 22:31:02	2008-04-27 02:42:20	28.2
no-other-reason	40946 (.long) (up 1)	lfn:/grid/auger/prod/resubmit_2008-02-22/epos_gr04/	/DAT002556.part		https_3a_2f_2fskurut1.cesnet.cz_3a9000_2fZZkFrbEvcn97xj7DYVVt6g		
2	849214888 (.part) (up 1)	Iron	WUPPERTAL::wn059	2008-05-03 16:31:26	2008-05-03 16:31:26	2008-05-04 20:01:36	27.5
ok	40946 (.long) (up 1)	lfn:/grid/auger/prod/RESUB.2008-05-03/epos_gr04/	/DAT002556.part		https_3a_2f_2fskurut1.cesnet.cz_3a9000_2f57ZSBA_5fxGGOUZ95jHG2GXA		

OFFLINE jobs

OFFLINE::v2r5p5 SD sim and reco: 5 jobs

i; Job status	.root filesize [B] Offline	ADST	Worker node	Job start	OFFLINE start	OFFLINE end	OFFLINE duration [min]
1: ok :: 83583	5959767	6216093	CESNET::skurut5-2.egee.cesnet.cz	2008-12-08 22:28:44	2008-12-08 22:28:52	2008-12-09 04:34:18	365.4
2: ok :: 83585	4423683	13665477	CESNET::skurut5-2.egee.cesnet.cz	2008-12-09 04:34:41	2008-12-09 04:34:43	2008-12-09 10:19:27	344.7
3: ok :: 83587	5929802	16930206	CESNET::skurut5-2.egee.cesnet.cz	2008-12-09 10:20:04	2008-12-09 10:20:06	2008-12-09 16:09:28	349.4
4: ok :: 83589	6368533	10931900	CESNET::skurut5-2.egee.cesnet.cz	2008-12-09 16:10:04	2008-12-09 16:10:06	2008-12-09 22:22:14	372.1
5: ok :: 83591	5569324	5133058	CESNET::skurut5-2.egee.cesnet.cz	2008-12-09 22:22:49	2008-12-09 22:22:51	2008-12-10 04:13:23	350.5

OFFLINE::v2r5p1 SD sim and reco: 0 jobs

OFFLINE::v2r4p2 HD sim: 0 jobs

OFFLINE::v2r4p1 HD sim: 0 jobs

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CORSIKA jobs color scheme

Successful job

Long0

The .long file produced has a zero length.

No fluka channel selected

or

Floating point exception

warning in the CORSIKA standard output file.

Short walltime

Job has been sent to a queue with too short walltime limit.

Other reason

Job failed due to other reason than the ones listed above.

Do not know yet

Either the job has not been submitted yet or it has not finished yet.

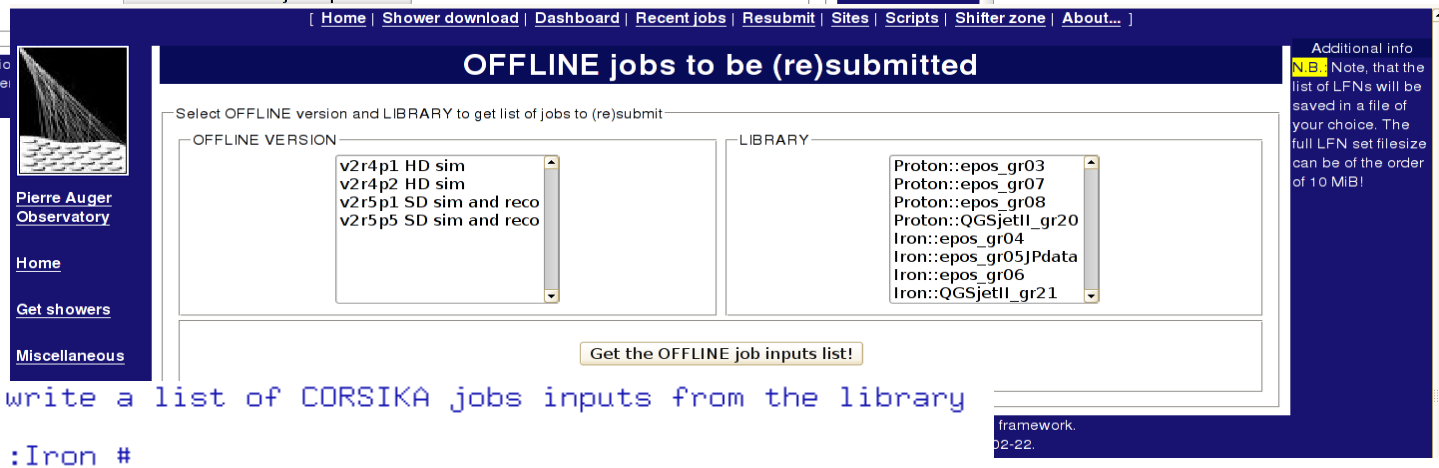
OFFLINE jobs color scheme

Successful job

Download of the

Dashboard for Shifters 7

Enabling Grids for E-sciencE




```
####### Your selection: write a list of CORSIKA jobs inputs from the library
####### #
####### epos_gr05JPdata::Iron #
####### #
####### The list of CORSIKA job inputs follows.#
INIT.epos_gr05JPdata_en00.000_th00.000_00010
INIT.epos_gr05JPdata_en00.000_th00.000_00020
INIT.epos_gr05JPdata_en00.000_th00.000_00030
INIT.epos_gr05JPdata_en00.000_th00.000_00040
INIT.epos_gr05JPdata_en00.000_th00.000_00050
INIT.epos_gr05JPdata_en00.000_th00.000_00060
...
####### There are 44 CORSIKA jobs out of 560 of the library epos_gr05JPdata::
Iron to be (re)submitted. #
####### Actual date: 2009-02-15 22:22:40 Europe/Prague #
```

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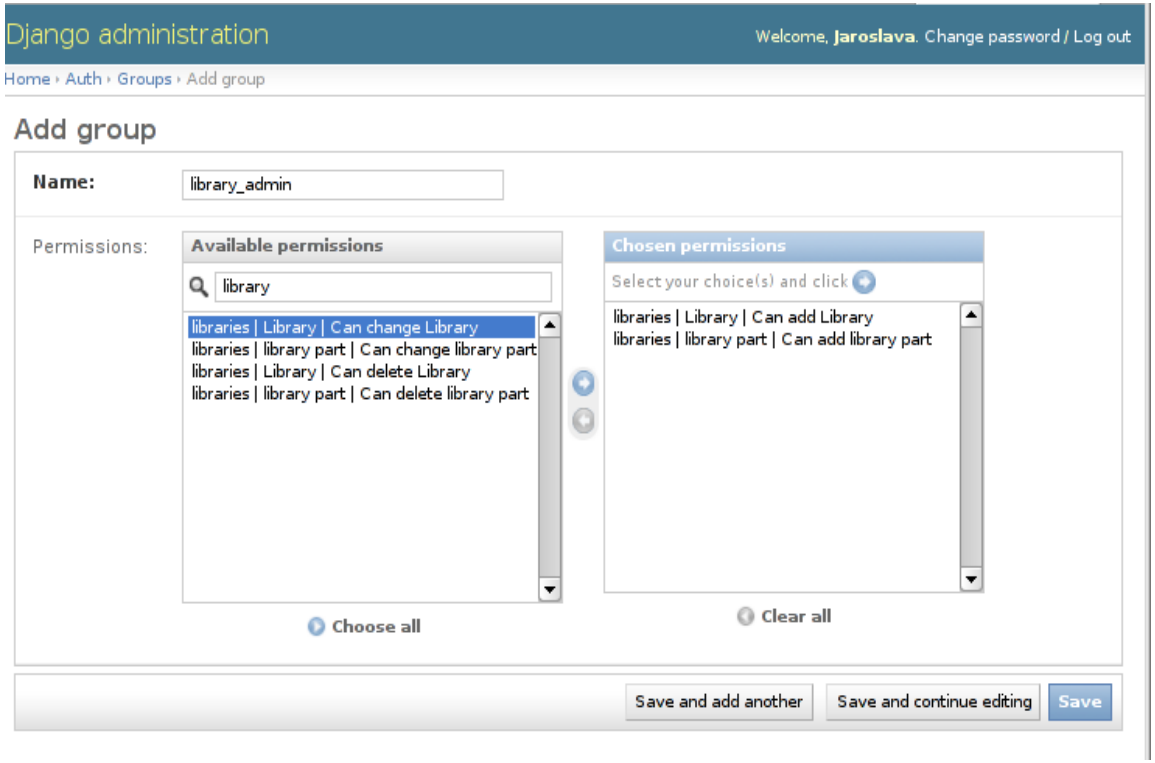
Dashboard for Shifters 9



Conclusions

- **Production framework successfully deployed**
  - Official Auger production
  - Private user production
- **Monitoring with the Dashboard performed**
- **Simulated data delivered to physicists**
- **Production manageable by a single person**
  - Tested also with the production team