LHCb Computing activities
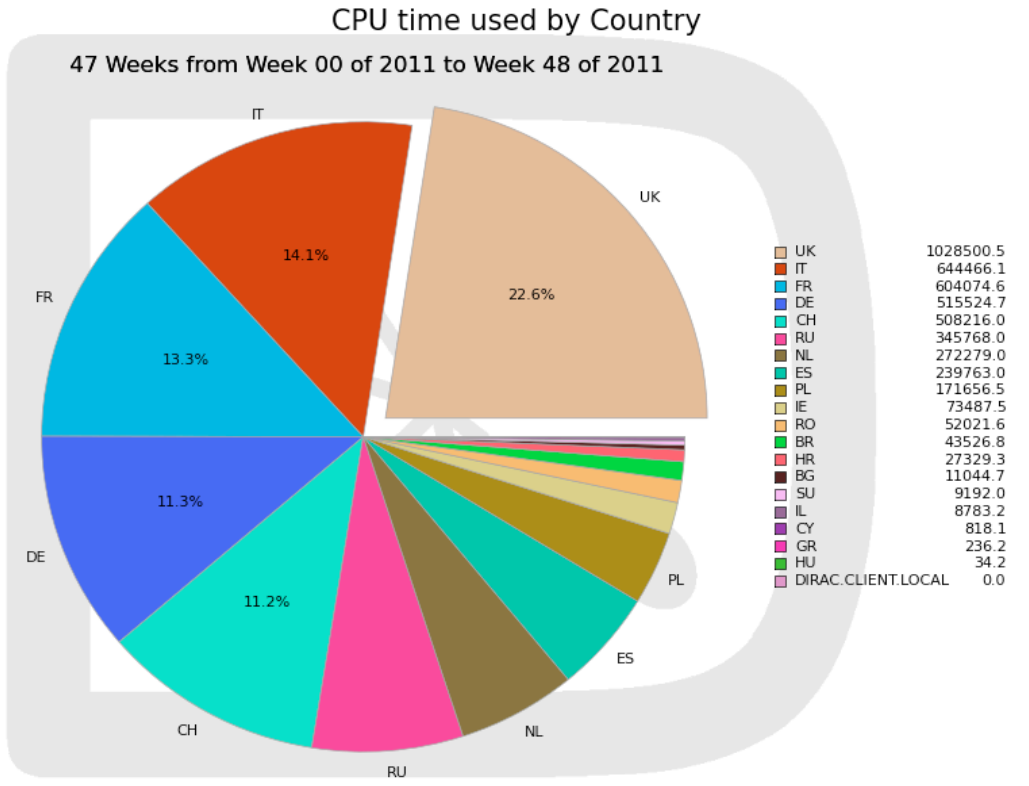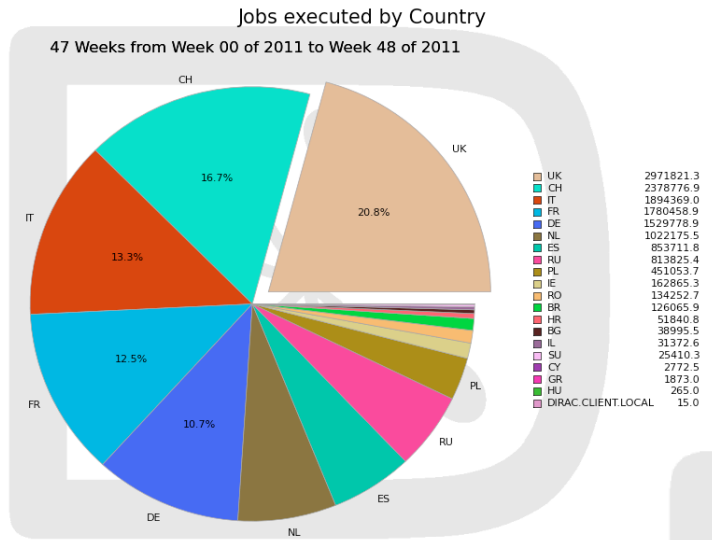
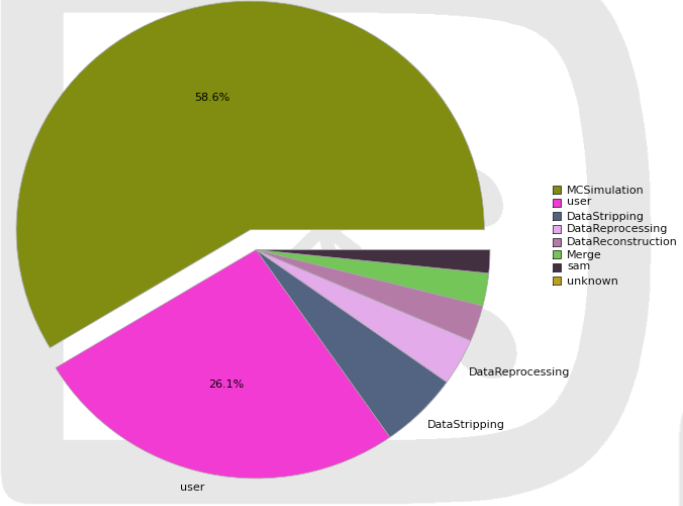*Joel Closier*

CERN – LHCb

Share of LCG-France in LHCb activities

LHCb COMPUTING ACTIVITIES

Jobs Type executed in LCG-FRANCE

47 Weeks from Week 00 of 2011 to Week 48 of 2011

MCSimulation 58.6%

user 26.1%

DataReprocessing

DataStripping

MCSimulation	1043967.4
user	464137.3
DataStripping	97401.3
DataReprocessing	59145.0
DataReconstruction	45648.2
Merge	40911.8
sam	29202.8
unknown	45.0

Generated

CPU time used in LCG-FRANCE

47 Weeks from Week 00 of 2011 to Week 48 of 2011

MCSimulation 70.6%

11.1%

DataStripping unknown

user

DataReconstruction
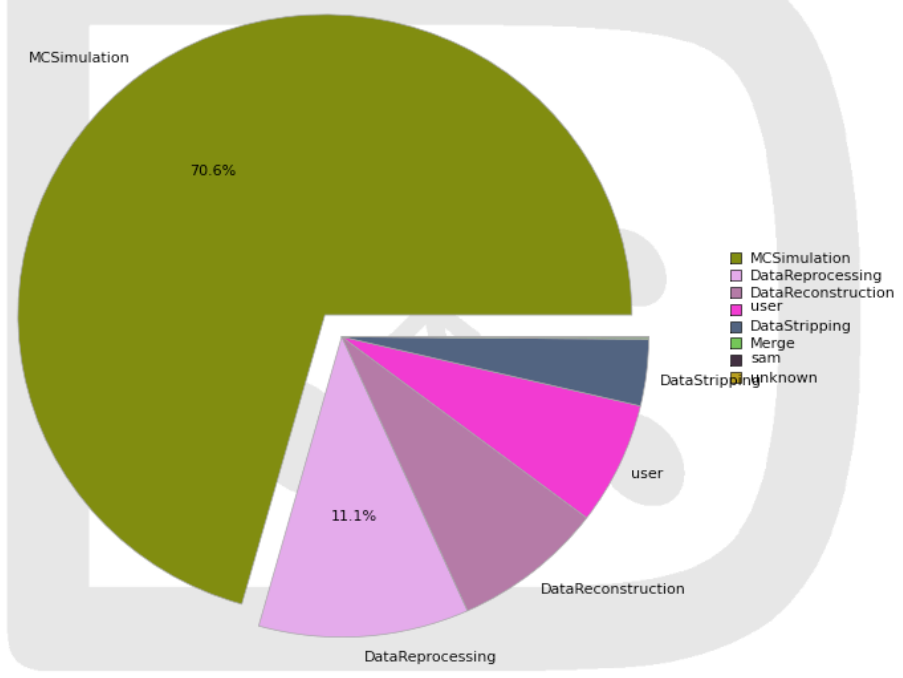
DataReprocessing

MCSimulation	453583.4
DataReprocessing	71175.4
DataReconstruction	51270.6
user	42317.7
DataStripping	22945.9
Merge	560.1
sam	274.4
unknown	0.0

Generated on 2011-11-29 21:08:44 UTC

LHCb COMPUTING ACTIVITIES

Production Jobs executed in LCG-FRANCE

47 Weeks from Week 00 of 2011 to Week 48 of 2011

LCG.IN2P3-T2.fr — 30.9%
LCG.IN2P3.fr — 20.5%
CG.LAPP.fr — 11.6%
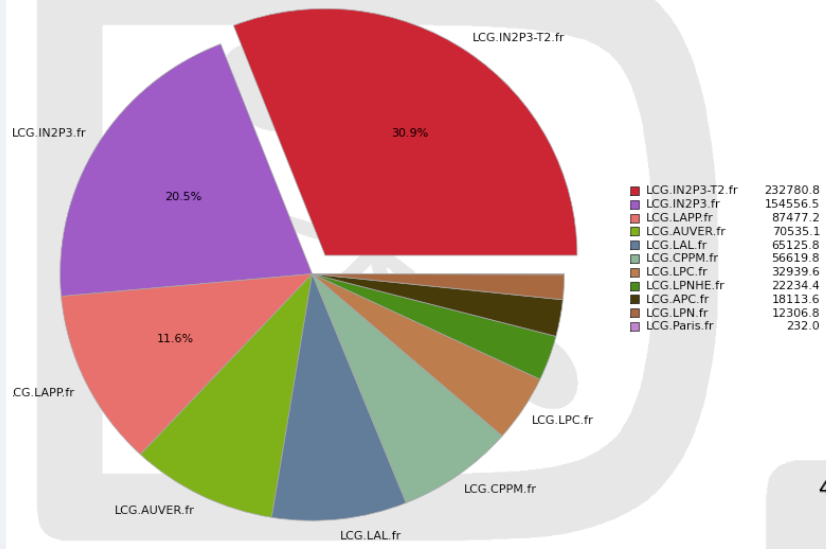
LCG.IN2P3-T2.fr	232780.8
LCG.IN2P3.fr	154556.5
LCG.LAPP.fr	87477.2
LCG.AUVER.fr	70535.1
LCG.LAL.fr	65125.8
LCG.CPPM.fr	56619.8
LCG.LPC.fr	32939.6
LCG.LPNHE.fr	22234.4
LCG.APC.fr	18113.6
LCG.LPN.fr	12306.8
LCG.Paris.fr	232.0

LCG.AUVER.fr
LCG.LAL.fr
LCG.CPPM.fr
LCG.LPC.fr

Generated on 2

CPU Time usage for production in LCG-France

47 Weeks from Week 00 of 2011 to Week 48 of 2011

LCG.IN2P3.fr — 35.8%
-T2.fr — 26.5%
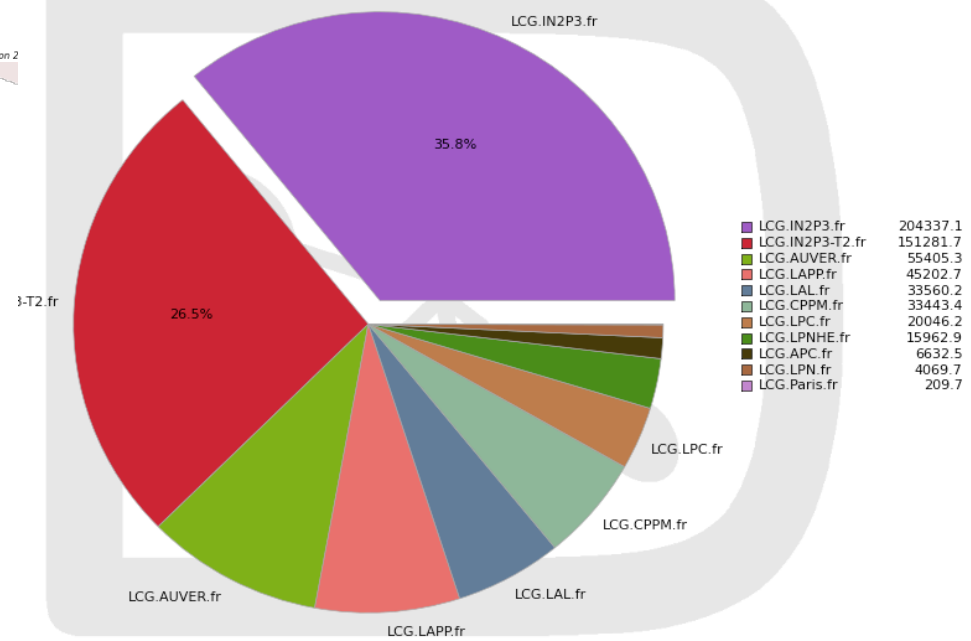
LCG.IN2P3.fr	204337.1
LCG.IN2P3-T2.fr	151281.7
LCG.AUVER.fr	55405.3
LCG.LAPP.fr	45202.7
LCG.LAL.fr	33560.2
LCG.CPPM.fr	33443.4
LCG.LPC.fr	20046.2
LCG.LPNHE.fr	15962.9
LCG.APC.fr	6632.5
LCG.LPN.fr	4069.7
LCG.Paris.fr	209.7

LCG.AUVER.fr
LCG.LAPP.fr
LCG.LAL.fr
LCG.CPPM.fr
LCG.LPC.fr

Generated on 2011-11-29 21:03:08 UTC

User Jobs executed in LCG-FRANCE

47 Weeks from Week 00 of 2011 to Week 48 of 2011

LCG.IN2P3.fr — 69.5%
LCG.IN2P3-T2.fr — 18.4%
LCG.AUVER.fr
LCG.LAPP.fr
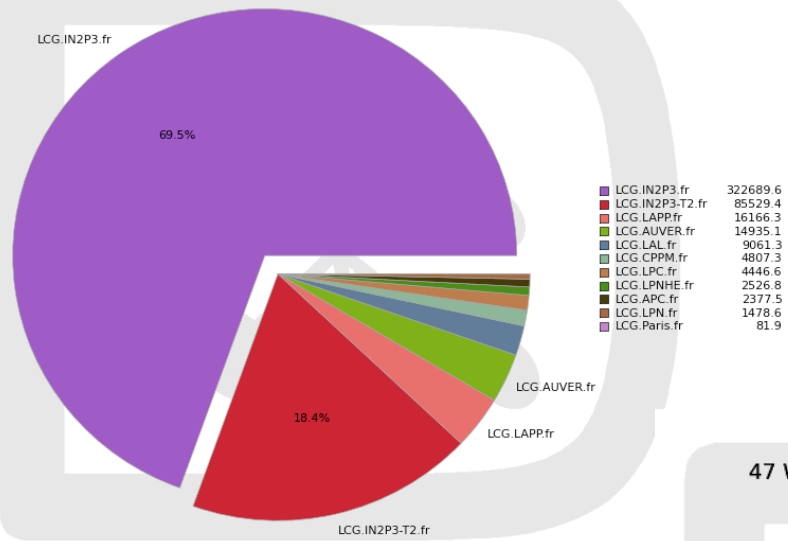
LCG.IN2P3.fr	322689.6
LCG.IN2P3-T2.fr	85529.4
LCG.LAPP.fr	16166.3
LCG.AUVER.fr	14935.1
LCG.LAL.fr	9061.3
LCG.CPPM.fr	4807.3
LCG.LPC.fr	4446.6
LCG.LPNHE.fr	2526.8
LCG.APC.fr	2377.5
LCG.LPN.fr	1478.6
LCG.Paris.fr	81.9

CPU Time usage for user in LCG-France

47 Weeks from Week 00 of 2011 to Week 48 of 2011

LCG.IN2P3.fr — 75.2%
LCG.IN2P3-T2.fr — 11.4%
LCG.AUVER.fr
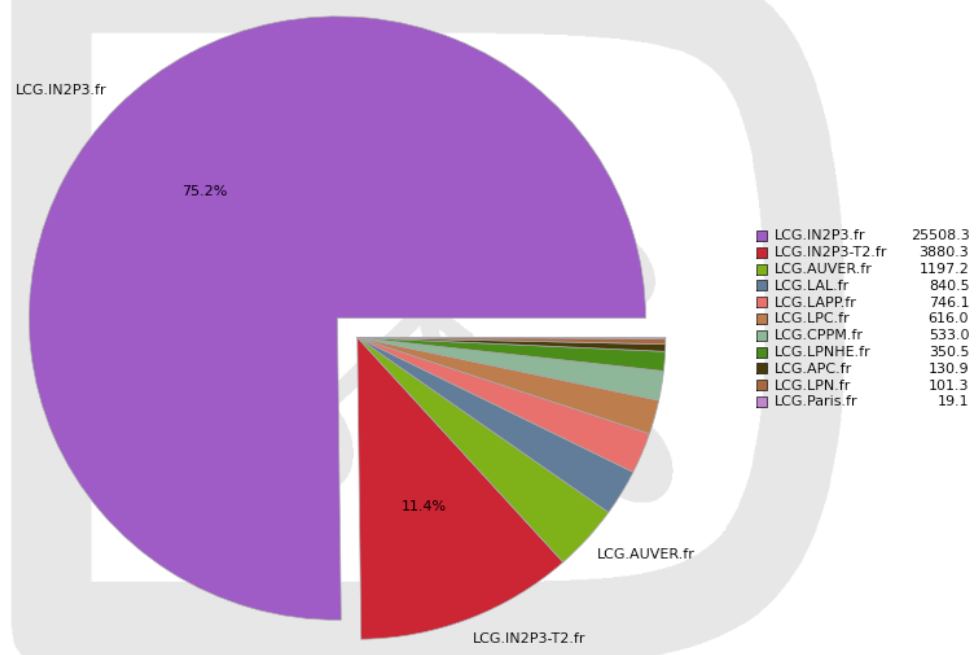
LCG.IN2P3.fr	25508.3
LCG.IN2P3-T2.fr	3880.3
LCG.AUVER.fr	1197.2
LCG.LAL.fr	840.5
LCG.LAPP.fr	746.1
LCG.LPC.fr	616.0
LCG.CPPM.fr	533.0
LCG.LPNHE.fr	350.5
LCG.APC.fr	130.9
LCG.LPN.fr	101.3
LCG.Paris.fr	19.1

LHCb COMPUTING ACTIVITIES

LH-Cb COMPUTING ACTIVITIES

- ○ **IN2P3 is one of our 6 T1 used in LHCb**
- ○ **Usage :**
  - ❏ **Reconstruction**
  - ❏ **Reprocessing**
  - ❏ **Stripping**
  - ❏ **Analysis**

- ○ **IN2P3-T2 is one of our 150 T2 used in LHCb**
- ○ **Usage :**
  - ❏ **Monte Carlo**
  - ❏ **Reprocessing**

- ○ **Since one month the difference between T1 and T2 for IN2P3 has evolved with the reshuffling of the queues available for LHCb.**
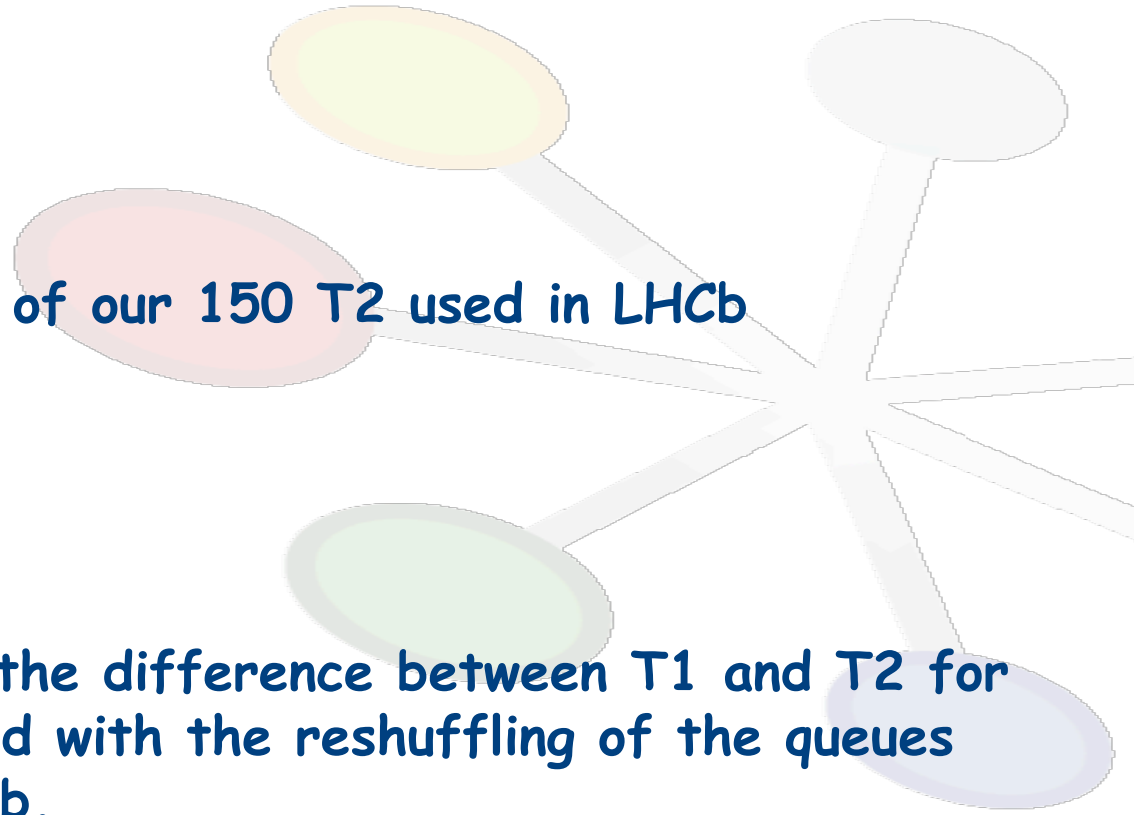
○ **We use 6 CREAM CE at IN2P3**

○ **verylong for /lhcb/Role=pilot with 4 GB on each CE from Site T1 (IN2P3-CC):**
* cccreamceli02.in2p3.fr
* cccreamceli05.in2p3.fr
* cccreamceli06.in2p3.fr

○ **verylong for /lhcb/Role=pilot with 5 GB on each CE from Site T2 (IN2P3-CC-T2)**
* cccreamceli03.in2p3.fr
* cccreamceli07.in2p3.fr
* cccreamceli08.in2p3.fr

○ **queues medium and long were reopened for /lhcb/ Role=pilot on all the Ces**

○ **5GB queue is historical and could be retired**

LH-Cb COMPUTING ACTIVITIES
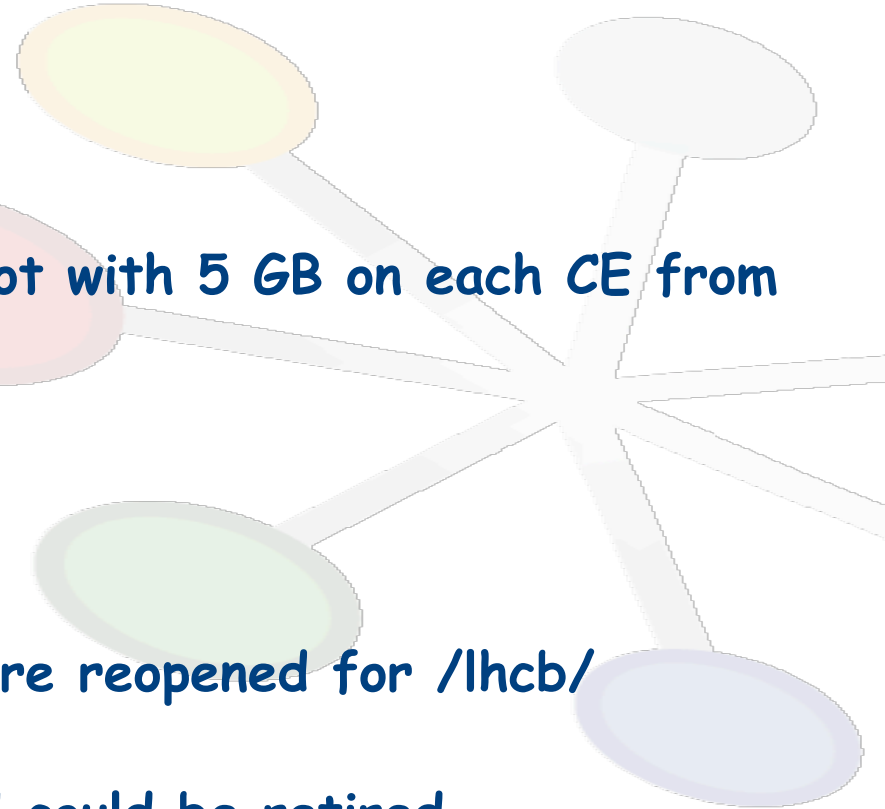
Space Token	Total Size (TB)	Total Files
LHCb-disk	267.7	86707
LHCb_FAILOVER	*0.1*	*25416*
LHCb_DST	*5.6*	*26780*
LHCb_M-DST	*12.6*	*23843*
LHCb_MC_DST	*65.8*	*14838*
LHCb_MC_M-DST	*43.3*	*9359*

395.1 TB

(Pledge 1010 TB)

Space Token	Total Size (TB)	Total Files
LHCb-Tape	403.7	126372
LHCb_RAW	*13.9*	*4712*
LHCb_RDST	*130.9*	*49516*

548.5 TB

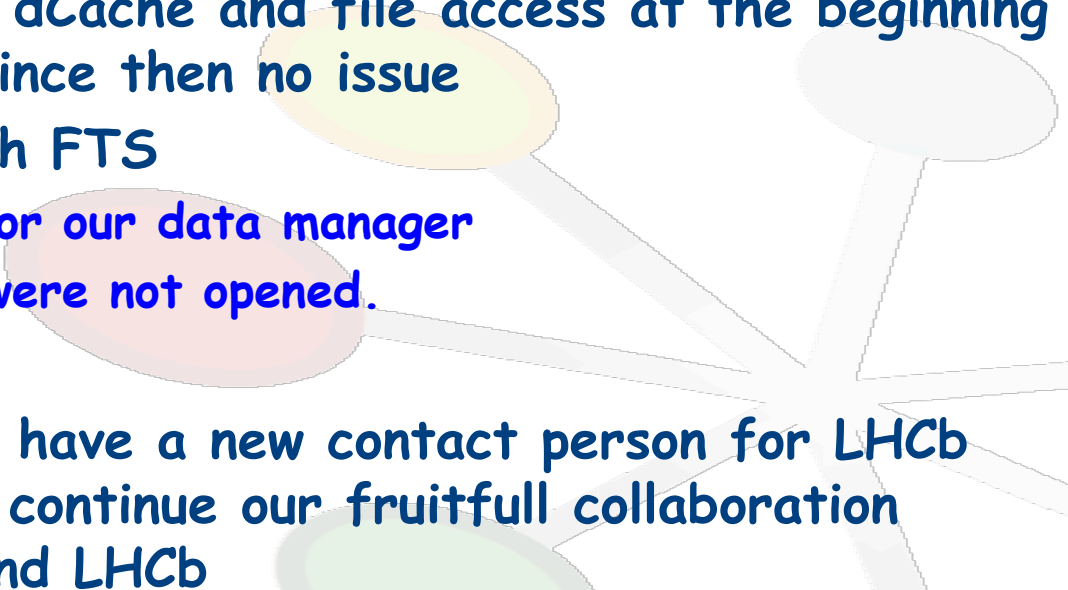| Space Token	Total Size (TB)	Total Files
LHCb_User	35.6	410367

35.6 TB

there are also some files (about 100,000) outside the space tokens, and we should provide IN2P3 the exact list and the space token where each file should be placed
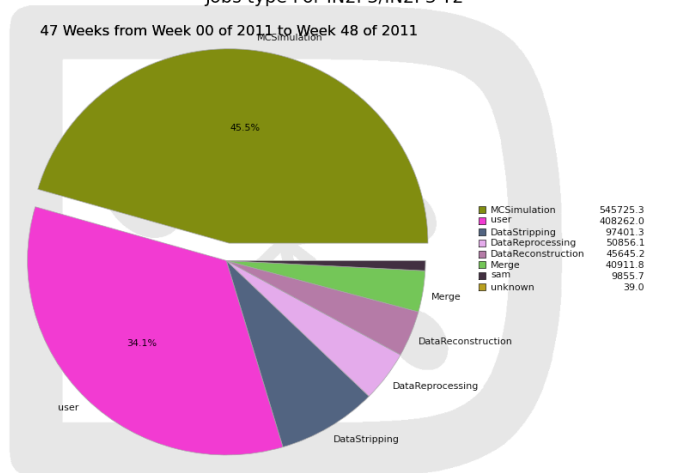
- Shared area:
  - lot of issue with the shared area. We have requested to all the T1 to move to CVMFS and since few weeks IN2P3 is using CVMFS. We had few WN badly configure at the beginning but now we did not notice any issue. We encourage the T2 to install CVMFS also.
- Space token:
  - We simplify the number of space token to have only three
  - We request a weekly dump to make our consistency check
- Memory usage:
  - We ask to increase the memory for LHCb job due a problem in our software. We have improve our software for the new releases.
- 3D streaming:
  - In july problem of 3D stream replication due a ORACLE problem

○ **Lost Data**

  ❑ **When we remove by mistake some files, IN2P3 manage to restore them.**

○ **Few problem with dCache and file access at the beginning of the year but since then no issue**

○ **Some problem with FTS**

  ❑ **Change of DN for our data manager**

  ❑ **Some channels were not opened.**

○ **Since 2 weeks we have a new contact person for LHCb which will help to continue our fruitfull collaboration between IN2P3 and LHCb**
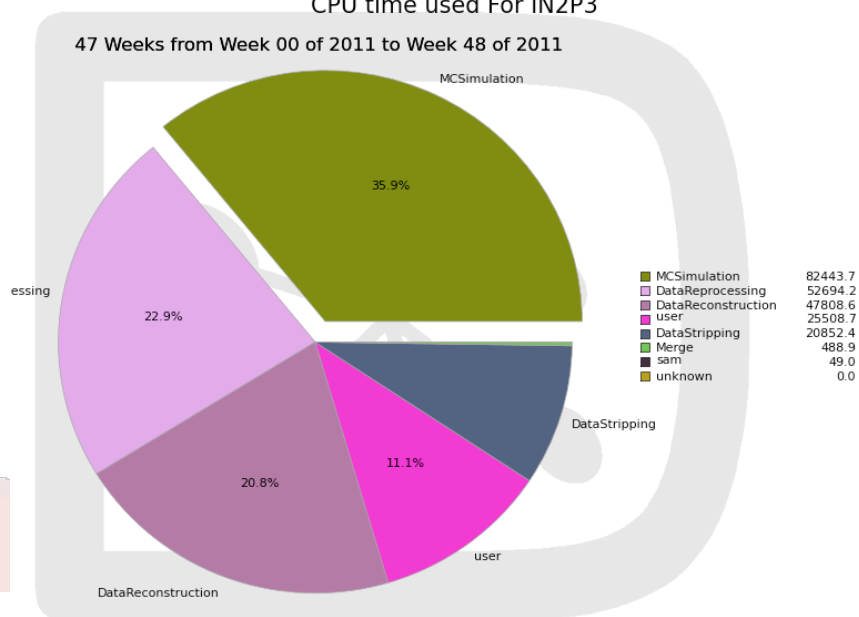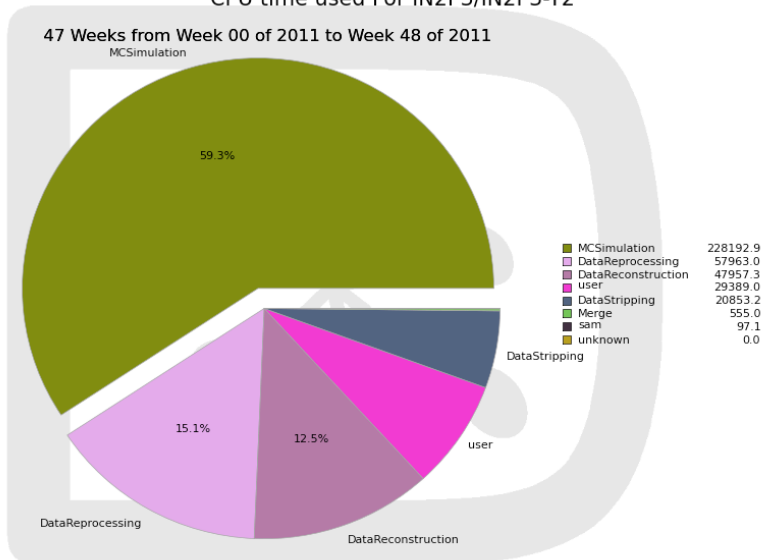
LH-Cb COMPUTING ACTIVITIES

Jobs type For IN2P3/IN2P3-T2

47 Weeks from Week 00 of 2011 to Week 48 of 2011

MCSimulation	545725.3
user	408262.0
DataStripping	97401.3
DataReprocessing	50856.1
DataReconstruction	45645.2
Merge	40911.8
sam	9855.7
unknown	39.0

Generated on 2011-11-28 09:25:47 UTC

CPU time used For IN2P3

47 Weeks from Week 00 of 2011 to Week 48 of 2011

MCSimulation	82443.7
DataReprocessing	52694.2
DataReconstruction	47808.6
user	25508.7
DataStripping	20852.4
Merge	488.9
sam	49.0
unknown	0.0

Generated on 2011-11-29 21:17:52 UTC

CPU time used For IN2P3/IN2P3-T2

47 Weeks from Week 00 of 2011 to Week 48 of 2011

MCSimulation	228192.9
DataReprocessing	57963.0
DataReconstruction	47957.3
user	29389.0
DataStripping	20853.2
Merge	555.0
sam	97.1
unknown	0.0

Generated on 2011-11-29 21:16:46 UTC

CPU time used For IN2P3-T2

47 Weeks from Week 00 of 2011 to Week 48 of 2011

MCSimulation	145749.2
DataReprocessing	5268.8
user	3880.3
DataReconstruction	148.7
Merge	66.2
sam	48.1
DataStripping	0.8
unknown	0.0

Generated on 2011-11-29 21:16:02 UTC

LHCb COMPUTING ACTIVITIES
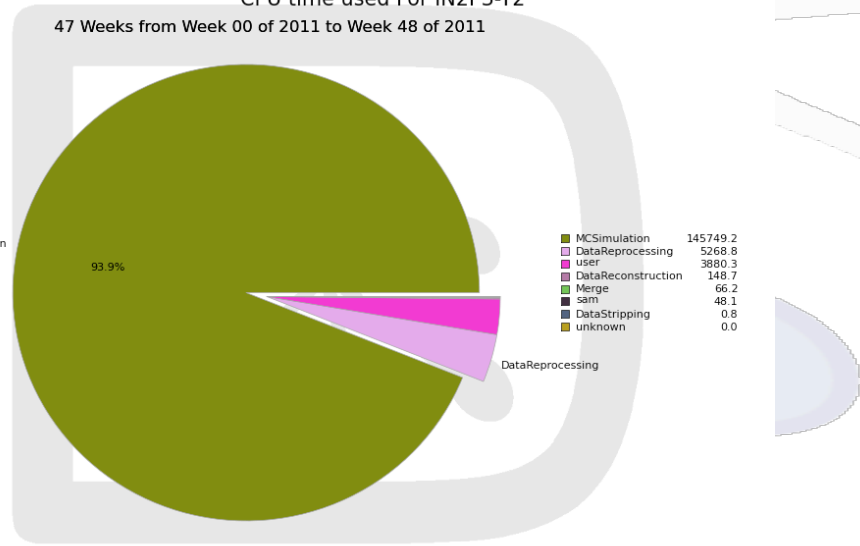
Jobs type For AUVERGRID
47 Weeks from Week 00 of 2011 to Week 48 of 2011

MCSimulation	119490.7
user	14935.1
sam	4421.8
DataReprocessing	238.0
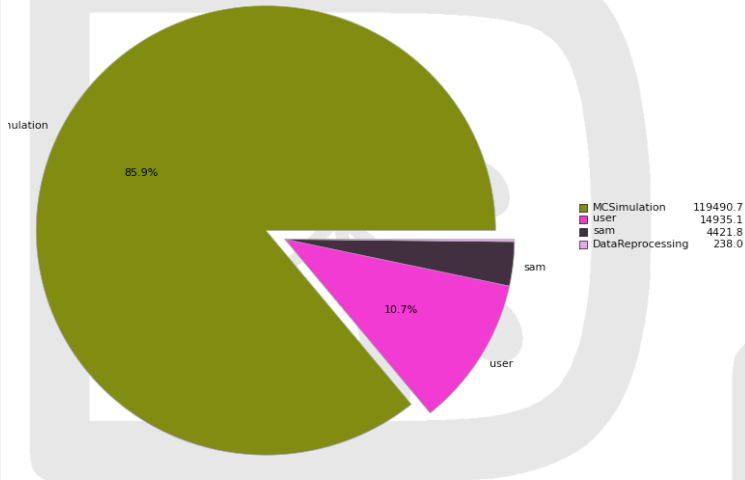
CPU time used For AUVERGRID
47 Weeks from Week 00 of 2011 to Week 48 of 2011

MCSimulation	54972.9
user	1197.2
DataReprocessing	387.8
sam	44.6
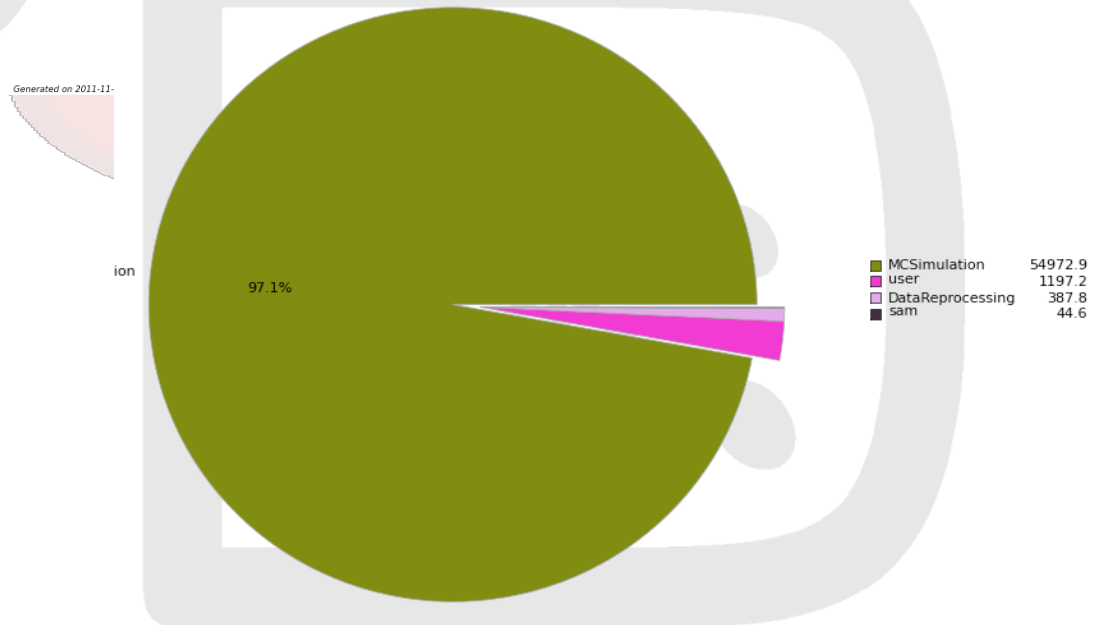
Generated on 2011-11-29 21:19:03 UTC

Main issue is the shared area

Jobs type For LAL
47 Weeks from Week 00 of 2011 to Week 48 of 2011

MCSimulation	88099.0
user	9060.3
sam	2549.6
DataReprocessing	2015.5
unknown	1.0
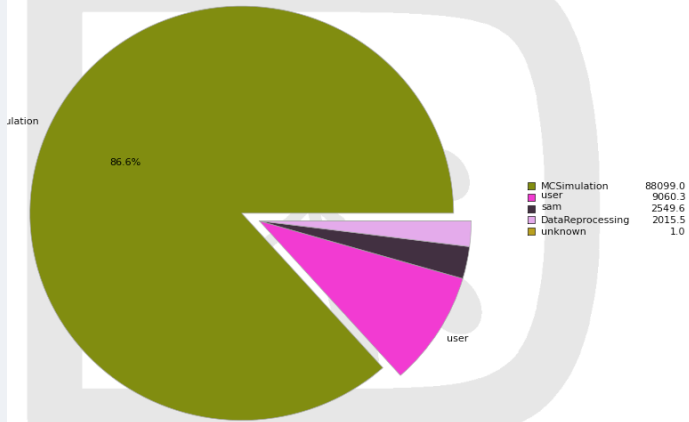
CPU time used For LAL
47 Weeks from Week 00 of 2011 to Week 48 of 2011

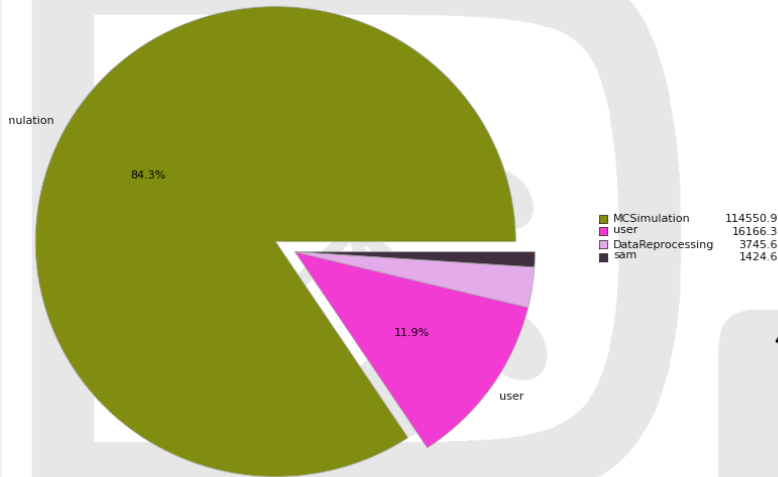|	
MCSimulation	31064.7
DataReprocessing	2478.3
user	840.5
sam	17.2
unknown	0.0

Generated on 2011-11-28 09:30:08 UTC
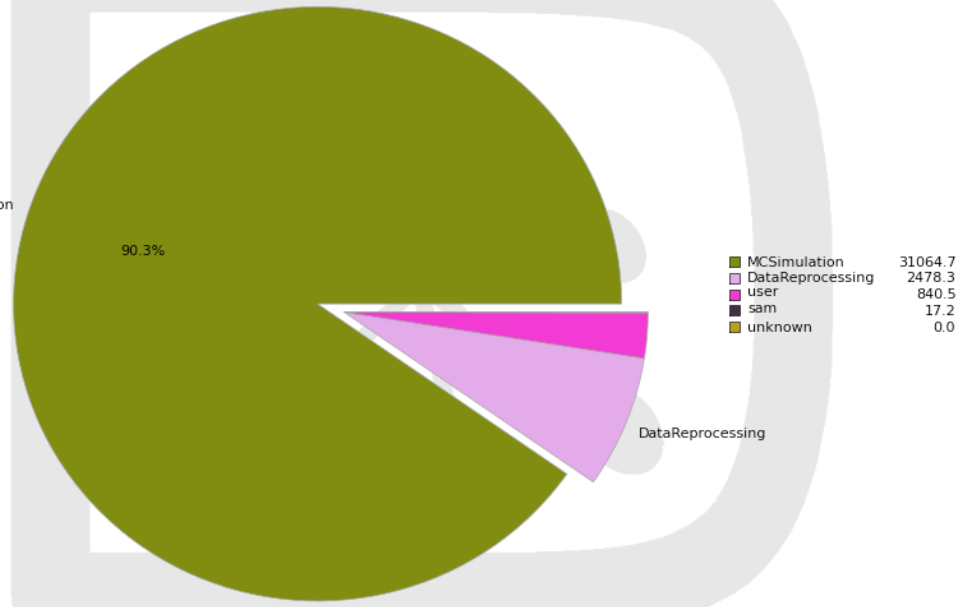
Generated on 2011-11-29 21:20:22 UTC

We do not use the potential of this site for various reason but most of them are out of our control.
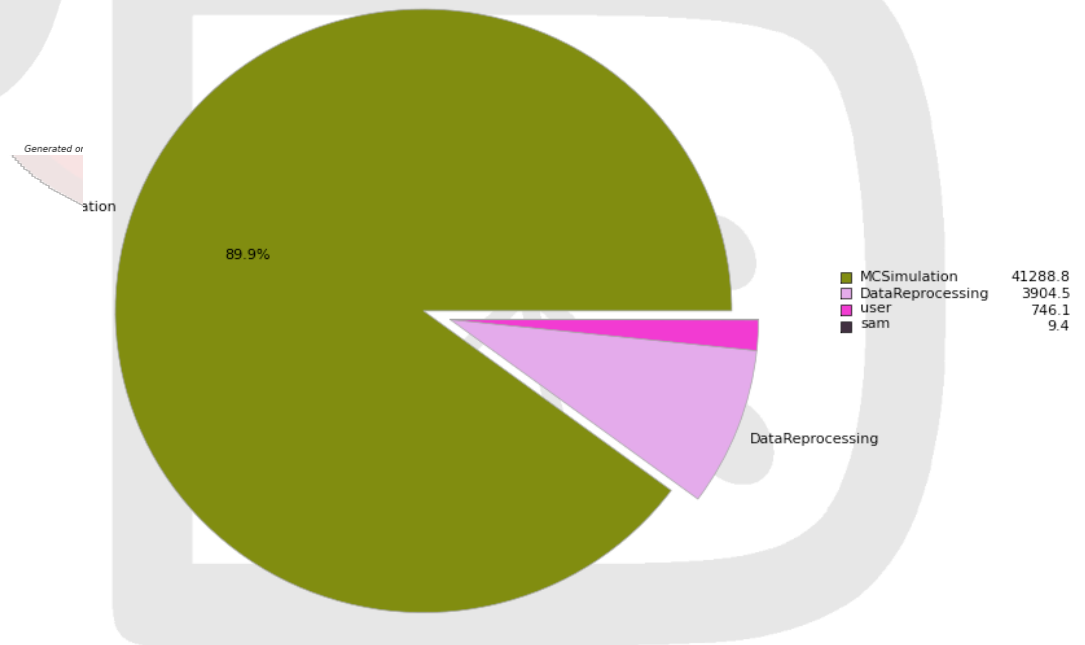
LHCb COMPUTING ACTIVITIES

Jobs type For ANNECY

47 Weeks from Week 00 of 2011 to Week 48 of 2011

84.3%

nulation

11.9%

user

MCSimulation	114550.9
user	16166.3
DataReprocessing	3745.6
sam	1424.6

CPU time used For LAPP

47 Weeks from Week 00 of 2011 to Week 48 of 2011

89.9%

ation

Generated o

DataReprocessing

MCSimulation	41288.8
DataReprocessing	3904.5
user	746.1
sam	9.4

Generated on 2011-11-29 21:21:24 UTC

Main issue is the shared area

LHCb COMPUTING ACTIVITIES

Jobs type For Clermont
47 Weeks from Week 00 of 2011 to Week 48 of 2011

MCSimulation
79.5%

user

sam
10.6%

MCSimulation	43294.8
sam	5757.2
user	4442.6
DataReprocessing	936.0
unknown	4.0
DataReconstruction	3.0
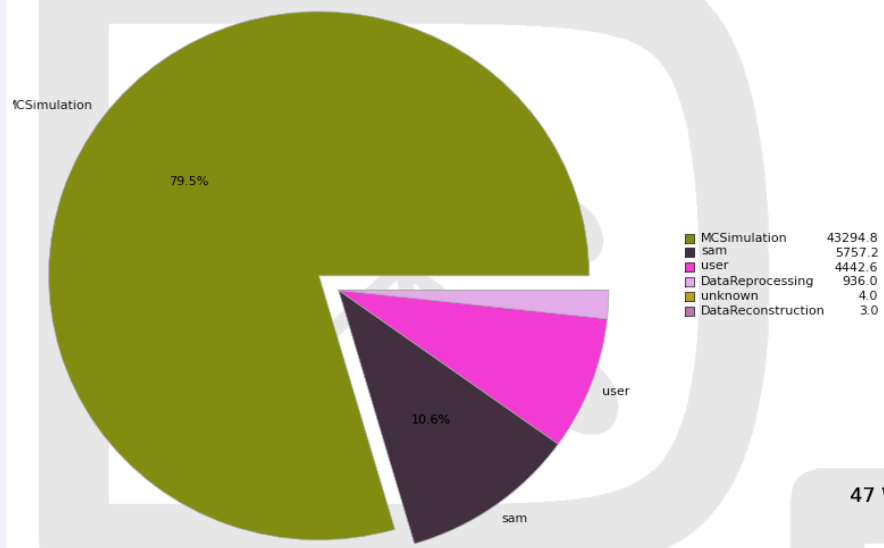
CPU time used For Clermont
47 Weeks from Week 00 of 2011 to Week 48 of 2011

ation
91.3%

DataReprocessing

MCSimulation	18862.5
DataReprocessing	1131.2
user	616.0
sam	49.9
DataReconstruction	2.6
unknown	0.0

Generated on 2011-11-29 21:22:13 UTC
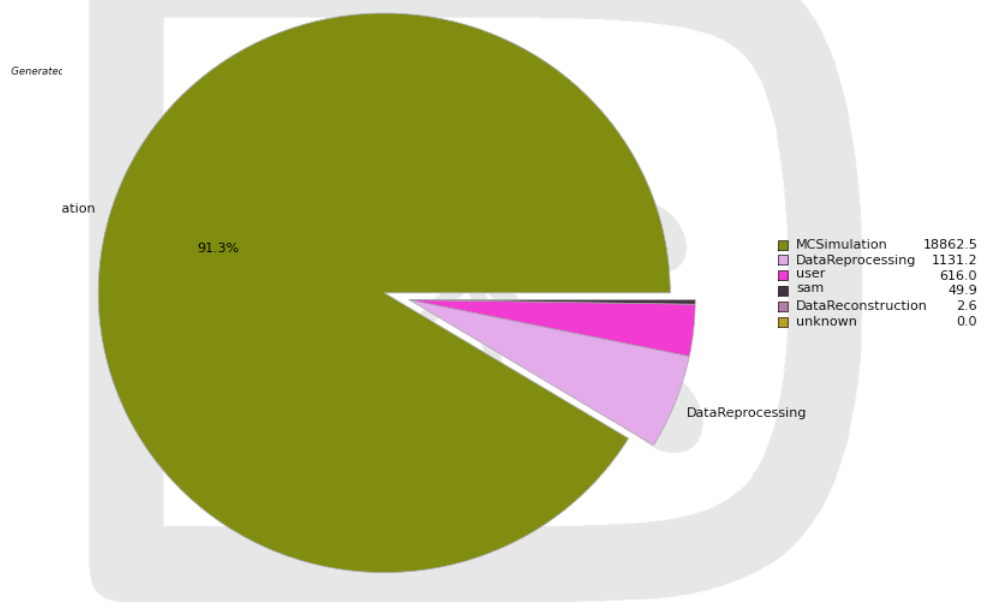
Jobs type For LPNHE
47 Weeks from Week 00 of 2011 to Week 48 of 2011

ulation
88.6%
sam
user

MCSimulation	30381.6
user	2526.8
sam	1398.2
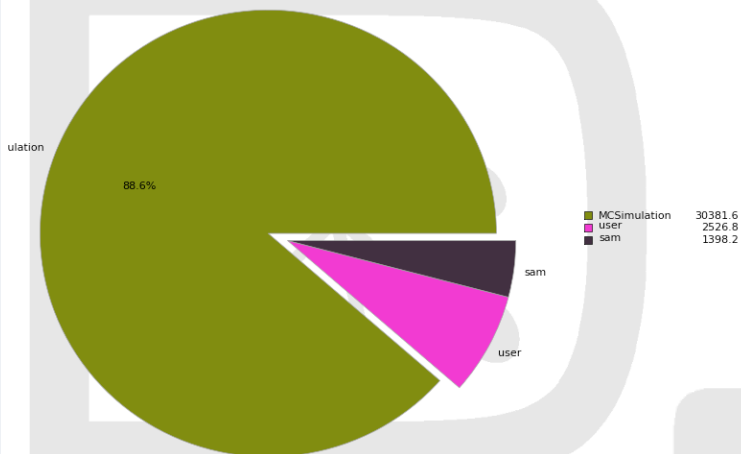
CPU time used For LPNHE
47 Weeks from Week 00 of 2011 to Week 48 of 2011

Generated
tion
97.8%

MCSimulation	15951.0
user	350.5
sam	11.9

Generated on 2011-11-29 21:23:04 UTC

LHCb COMPUTING ACTIVITIES
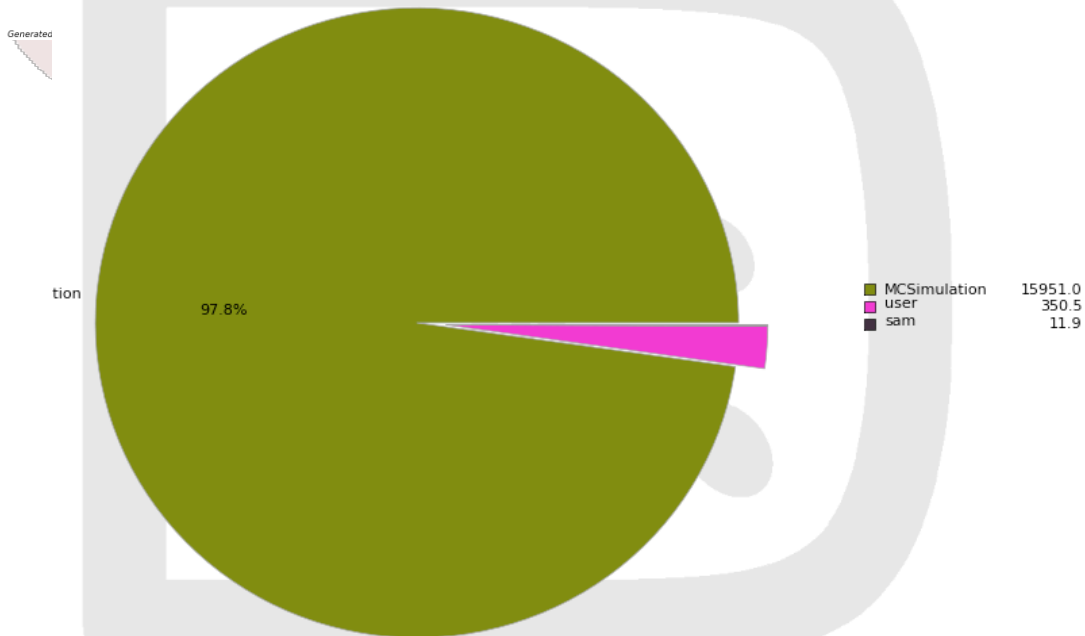
Jobs type For Marseille

47 Weeks from Week 00 of 2011 to Week 48 of 2011

MCSimulation	69409.3
user	4806.3
sam	1489.2
DataReprocessing	1353.8
unknown	1.0

90.1%
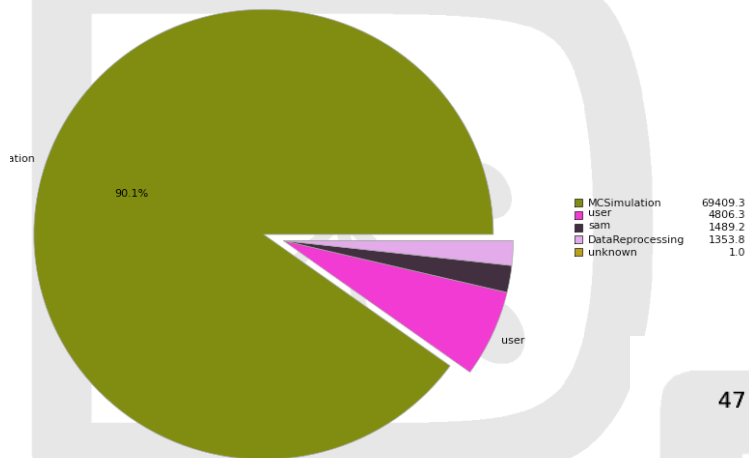
CPU time used For Marseille

47 Weeks from Week 00 of 2011 to Week 48 of 2011

MCSimulation	31995.2
DataReprocessing	1436.1
user	533.0
sam	12.1
unknown	0.0

94.2%

Generated on 2011-11-29 21:23:56 UTC
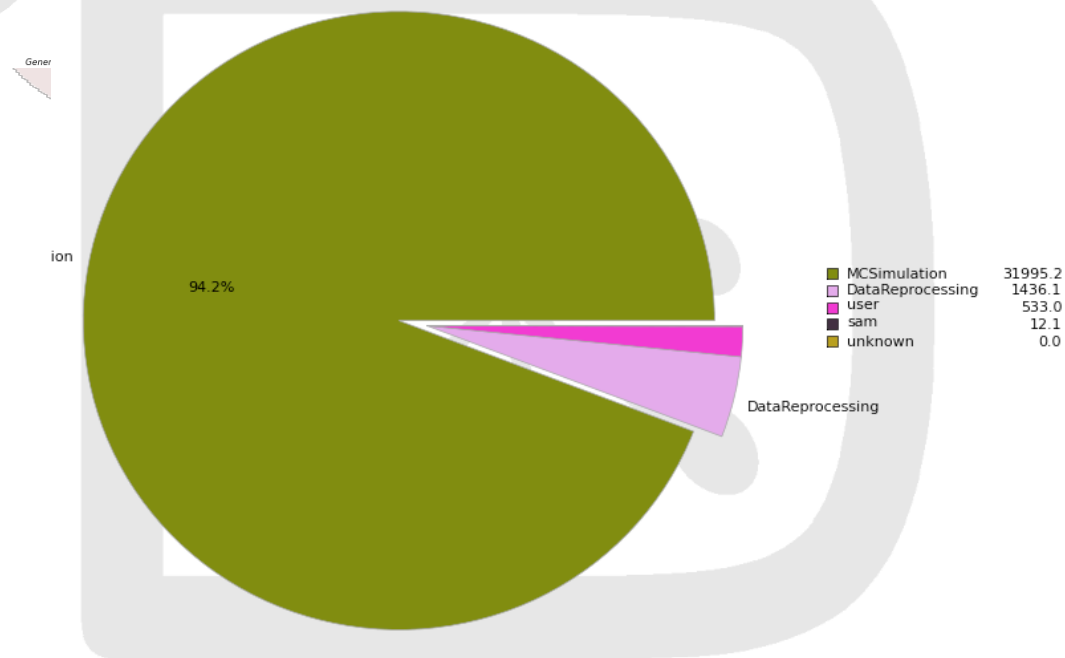
Jobs type For LPN
47 Weeks from Week 00 of 2011 to Week 48 of 2011

MCSimulation	13163.5
user	1478.6
sam	1149.4
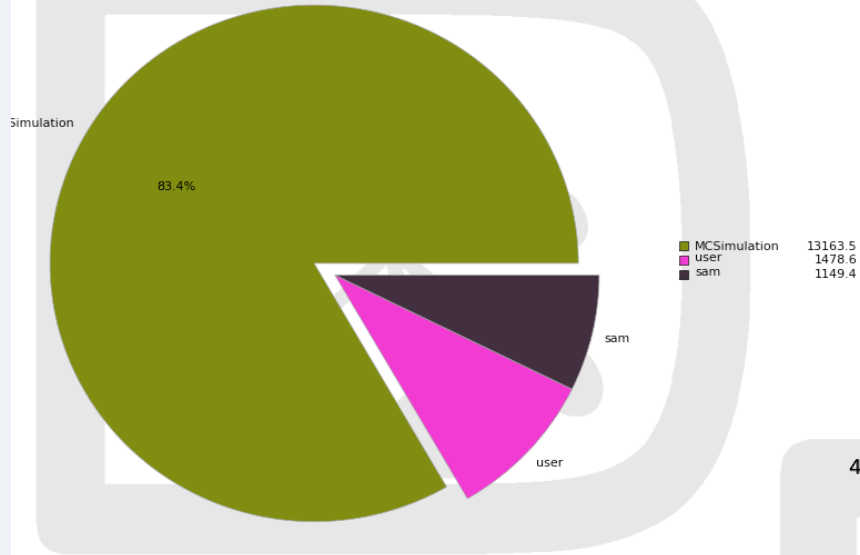
CPU time used For LPN
47 Weeks from Week 00 of 2011 to Week 48 of 2011

MCSimulation	4059.8
user	101.3
sam	10.0

Generated on 2011-11-29 21:24:51 UTC

18

LHCb COMPUTING ACTIVITIES
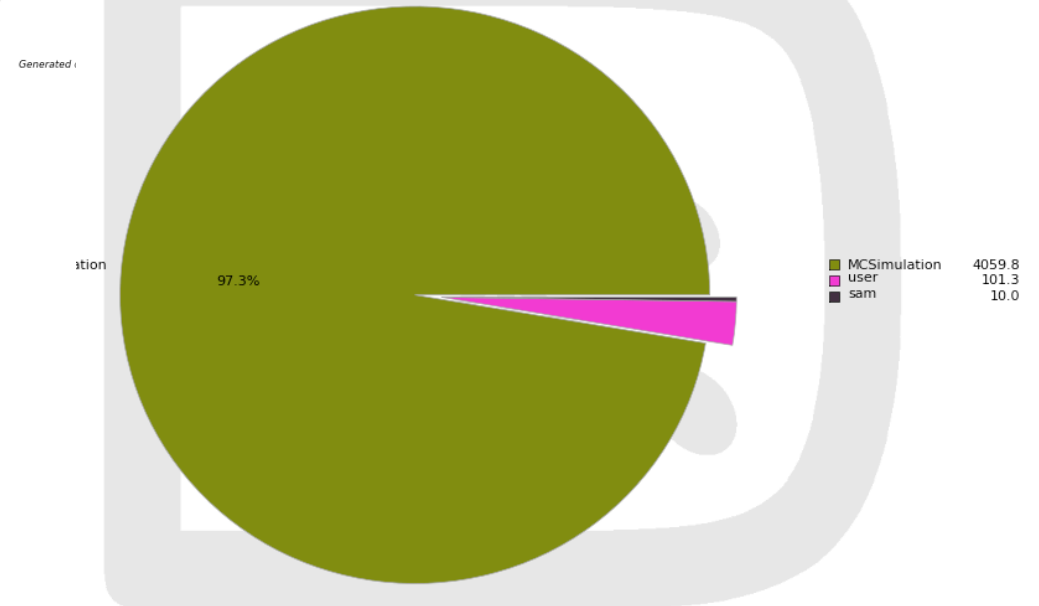
Jobs type For Paris
47 Weeks from Week 00 of 2011 to Week 48 of 2011

MCSimulation 54.0%

user 12.0%

sam 34.0%
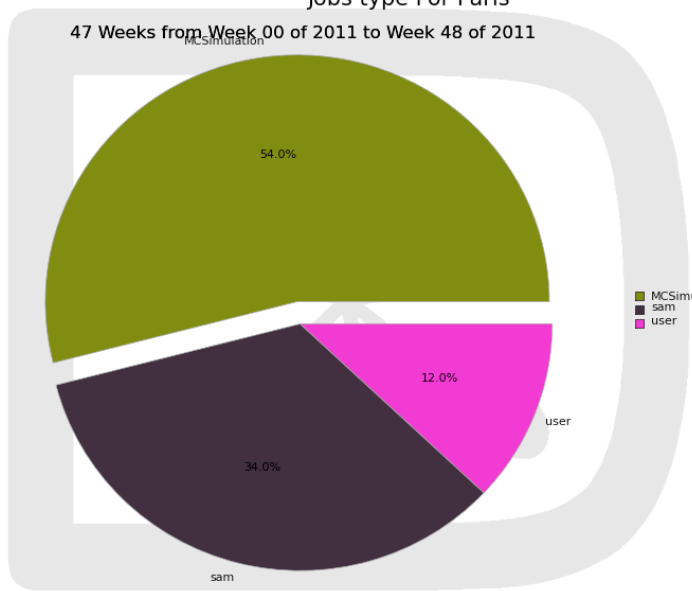
MCSimulation	368.4
sam	232.0
user	81.9
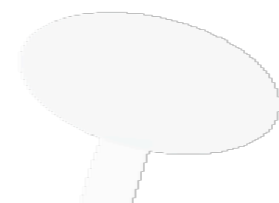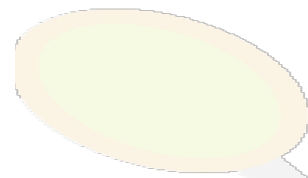
CPU time used For Paris
47 Weeks from Week 00 of 2011 to Week 48 of 2011

MCSimulation 90.9%

user

MCSimulation	208.0
user	19.1
sam	1.7

Generated on 2011-11-29 21:25:35 UTC