KIAF for ALICE Experiment

Sun Kun OH (Konkuk University)

16 November 2012

ATHIC2012 (Grand Hotel, Busan)

Flow Chart

- 1. GSDC
- 2. KIAF for ALICE
- 3. Prospect

1. GSDC

- GSDC is devoted to support computing facilities for high-energy physics experiments, including ALICE, STAR, Belle/Belle2, and CDF (before 2009), and other fields such as earth science, astrophysics, bio-informatics, etc. (after 2009)

Introduction to GSDC: Global Science Data Center

MISSION

Promotion of Data Intensive Researches by supporting cyber-environment

Physics
ALICE
STAR
Belle
CDF

2009 ~

Various
Bio-informatics
Earth Science
Astrophysics

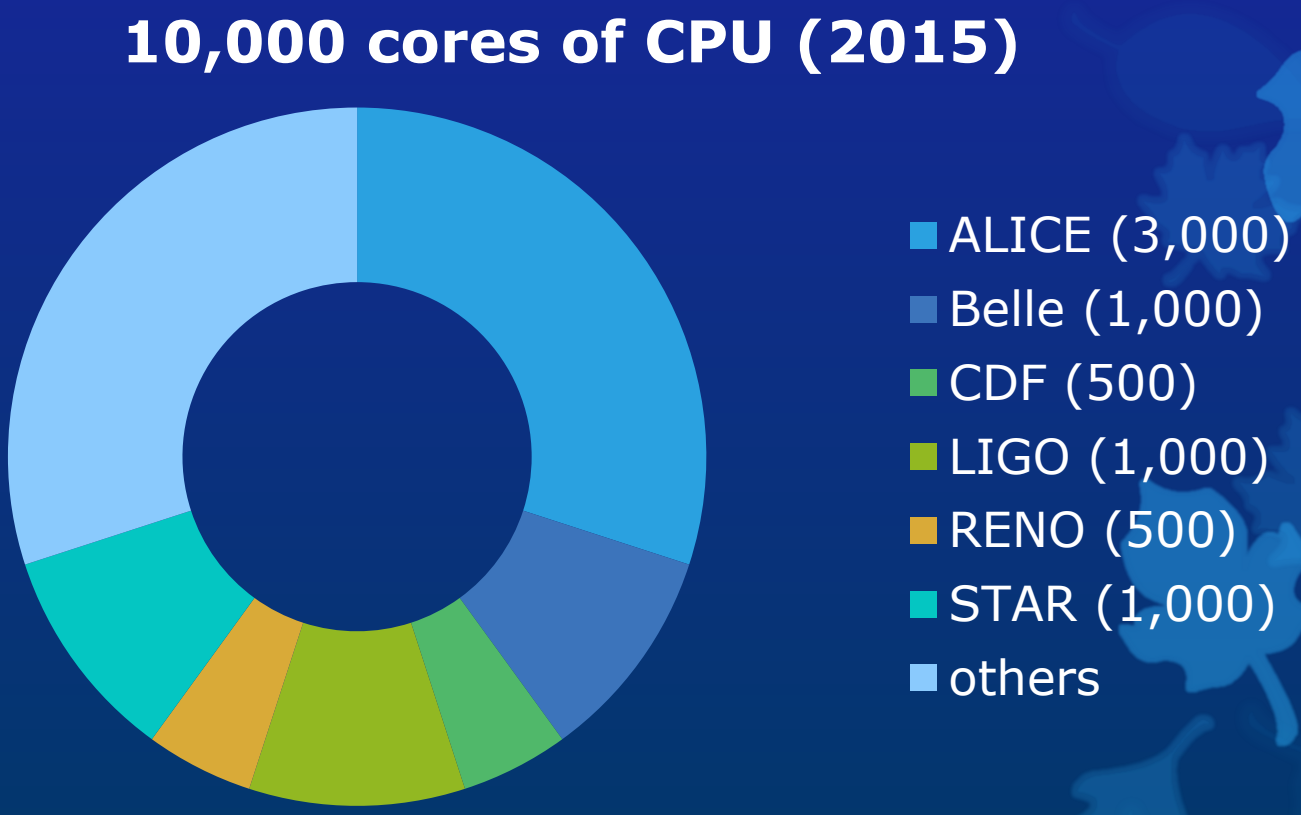
Next ~

National Representative Player in Data Centric Research Area

CPU dedication in 2012

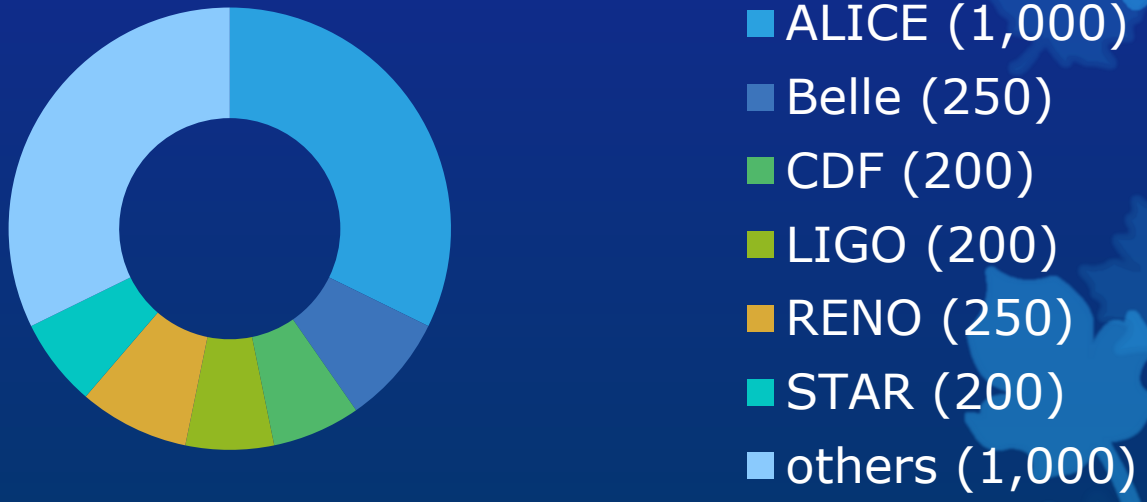
3,500 cores of CPU (2012)

CPU expansion by 2015

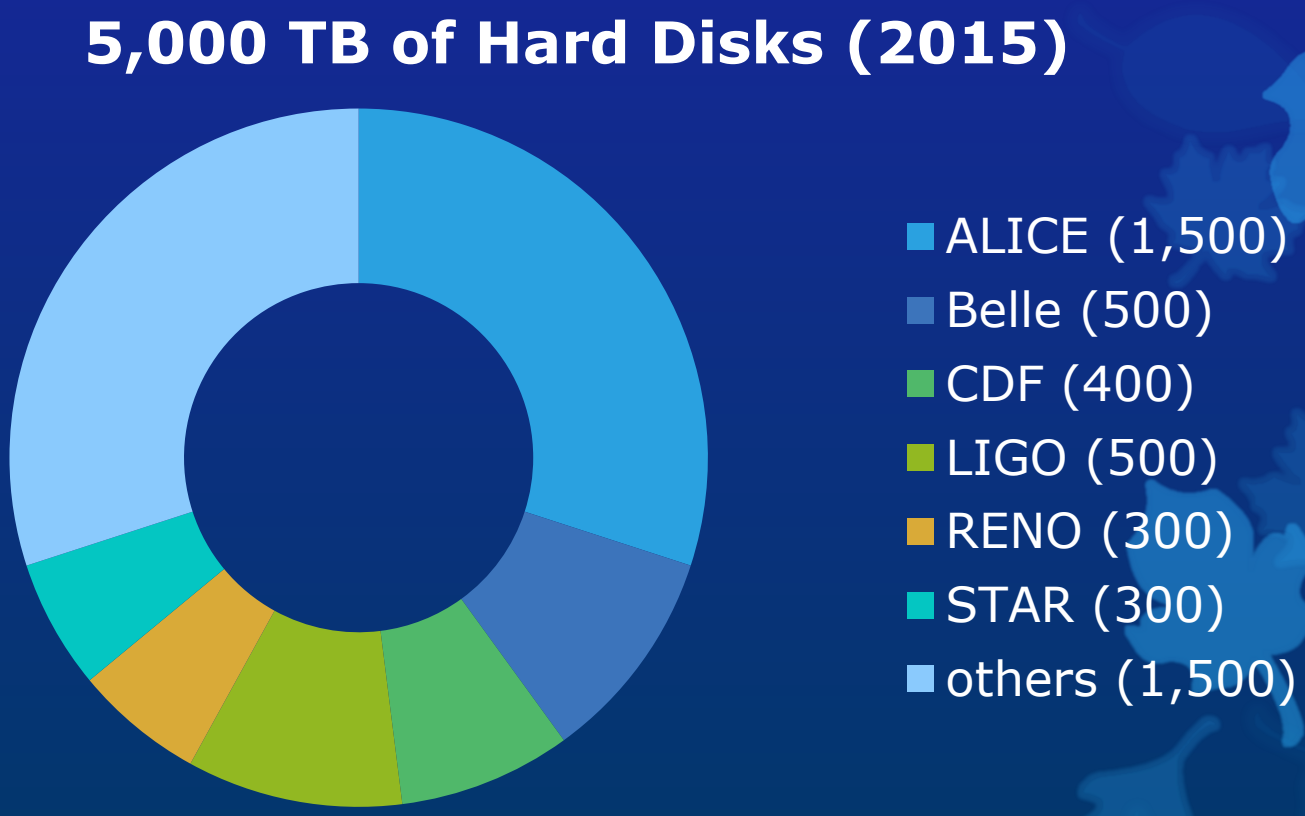


Disk dedication in 2012

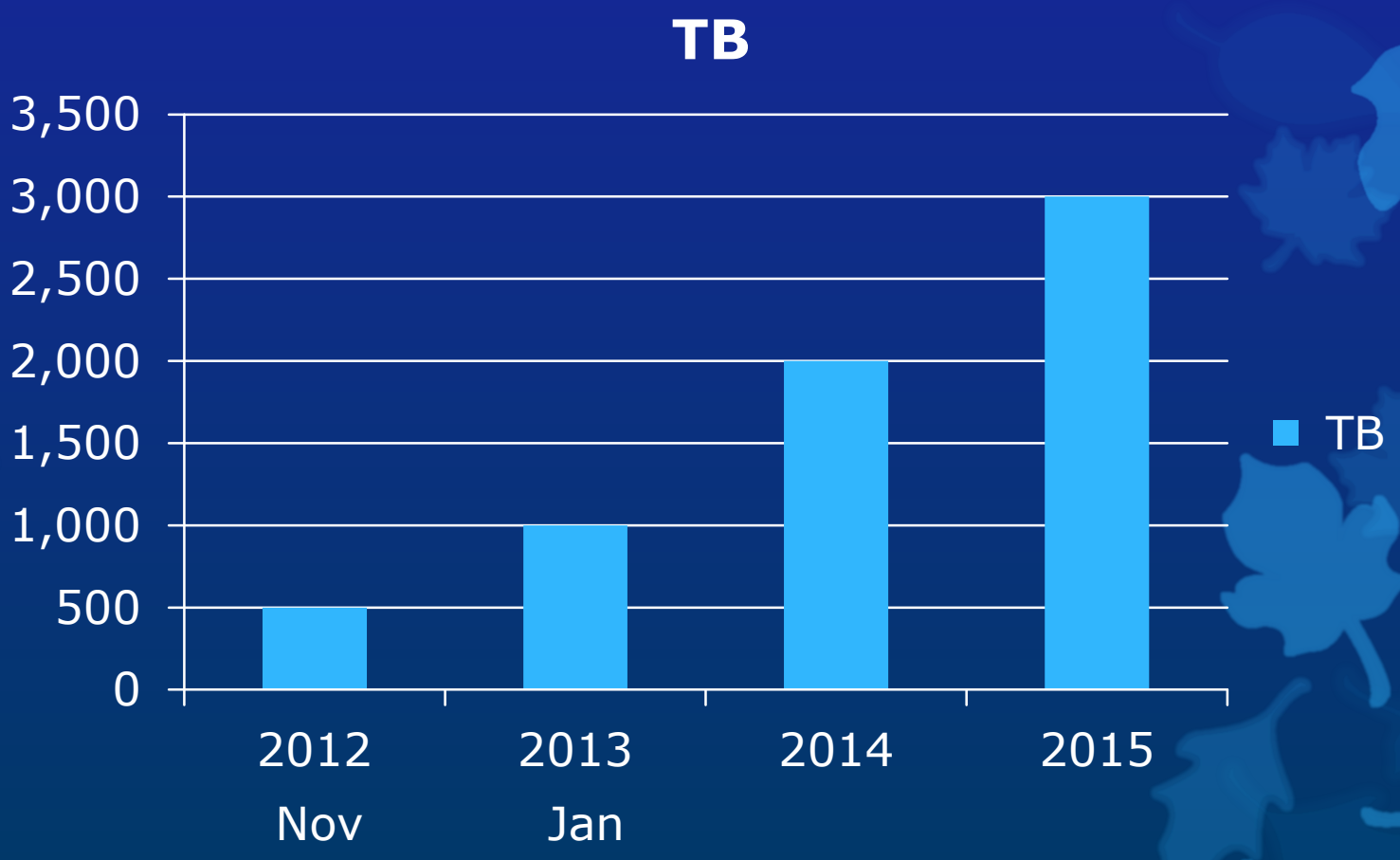
3,100 TB of Hard Disks (2012)



Disk expansion by 2015



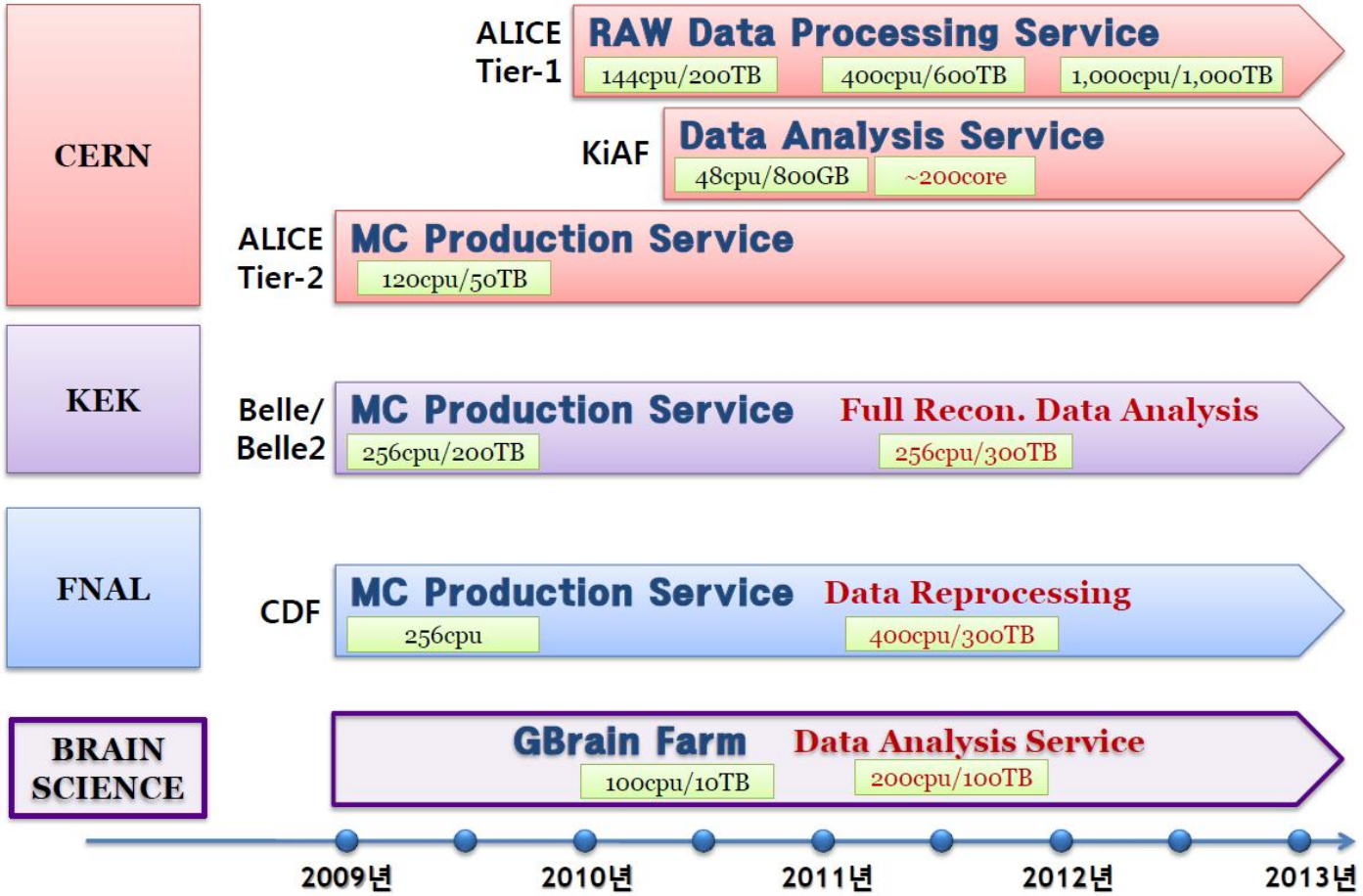
Magnetic tapes availability



2. KIAF for ALICE

- ALICE Tier-1 since 2012
- ALICE Tier-2 since 2008
- KIAF (KISTI Analysis Facility) since 2011

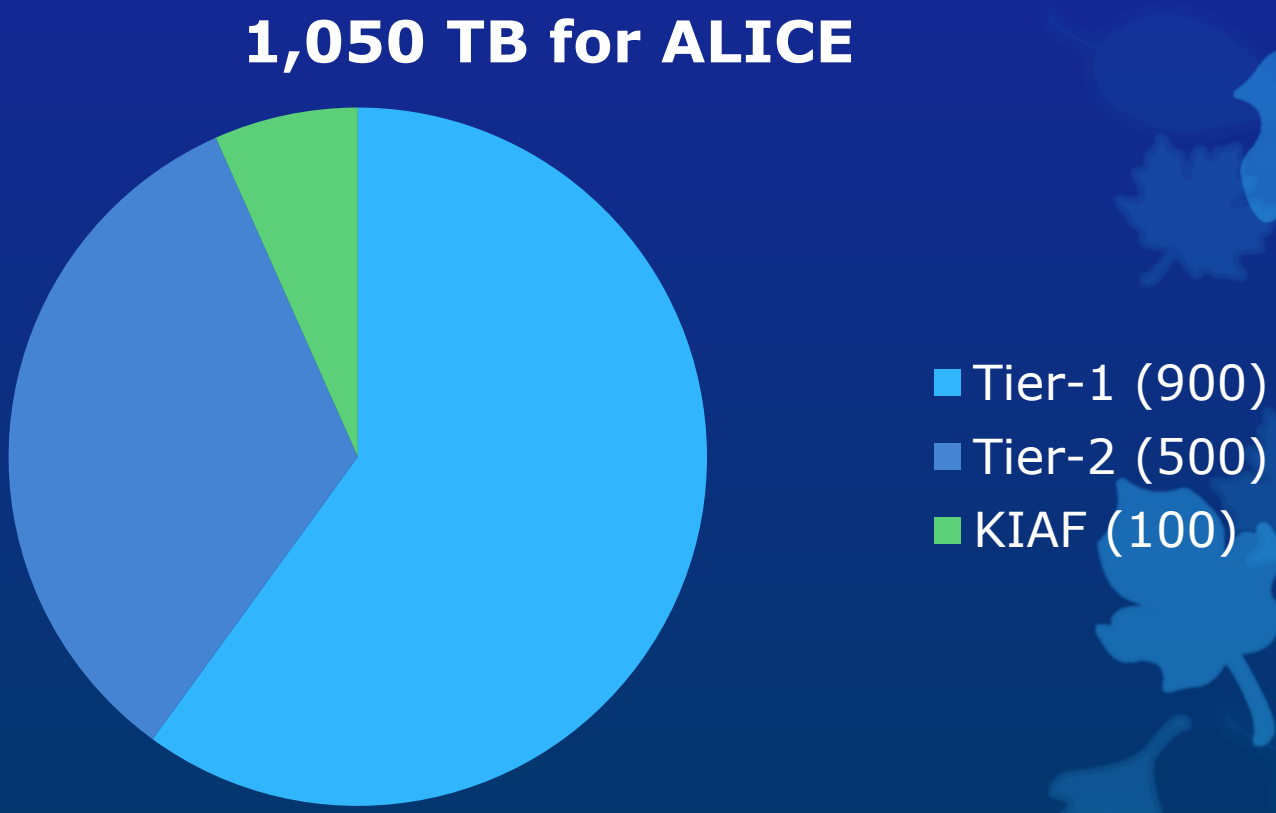
History of GSDC Service



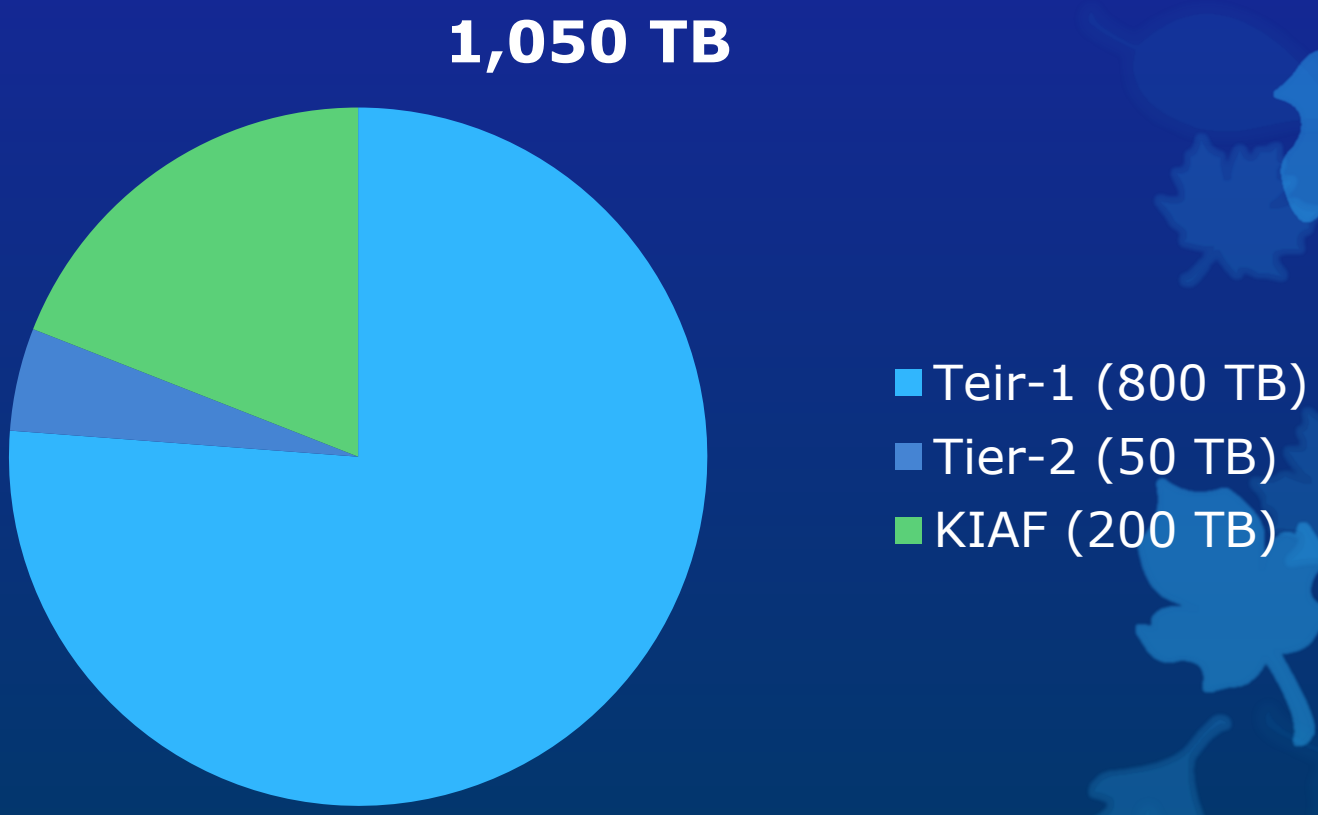
KIAF in brief

- Established within GSDC
- 96 work nodes and 170 TB of disk space
- ALICE users via PROOF package in ROOT
- root[0] TProof::Open("<user-id>@kiaf.sdfarm.kr")
- Bug/Error report to: alice-analysis-operations@cern.ch
- Current ROOT version: v5-34-02-1

CPU division in 2012



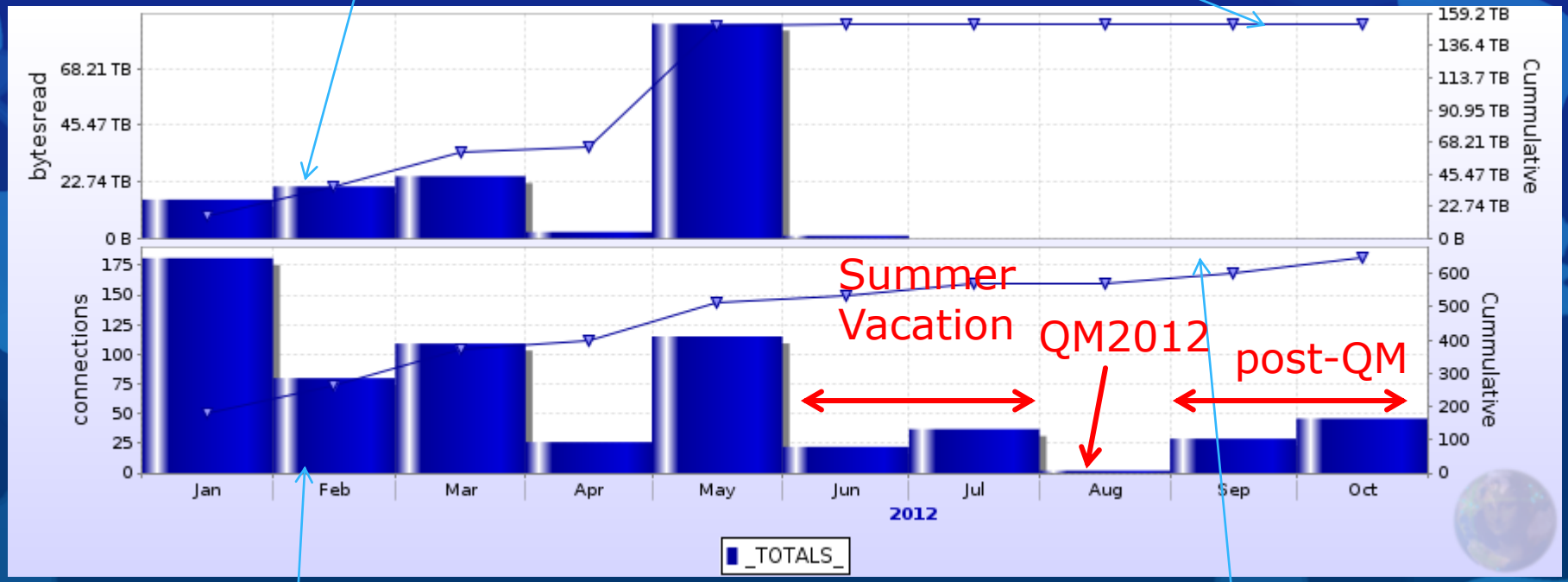
Disk division in 2012



KIAF performance in 2012

Monthly bytes read

More than 150TB read



Monthly Connections

More than 600 connections

My home dir | Catalogue browser | Repository Home | Administration Section | ALICE Reports | Events XML Feed | Firefox Toolbar | MonaLisa GUI

ALICE PROOF Clusters

What is this about?

Cluster list

	Cluster					ROOT	Aggregated disk space			AF xrootd		xrootd
Name	Online	Status	Proof master	Workers	Users	Version	Total	Free	Used	Running	Latest	Version
1. CAF		Stable	alice-caf.cern.ch	114	2	v5-34-02-1	159.6 TB	8.214 TB	151.4 TB	1.0.50	1.0.50	20100510-1509_dbg
2. CAF_TEST				-	-		-	-	-			
3. JRAF		Stable	jraf.jinr.ru	48	1	v5-34-02-1	7.049 TB	6.543 TB	518.6 GB	1.0.50	1.0.50	20100510-1509_dbg
4. KIAF		Stable	kiaf.sdfarm.kr	96	0	v5-34-02-1	171.9 TB	98.02 TB	73.85 TB	1.0.50	1.0.50	20100510-1509_dbg
5. LAF				-	-		-	-	-			
6. SAF		Maintenance sin...	nansafmaster.in2p3.fr	48	1	v5-34-02-1	12.07 TB	2.499 TB	9.573 TB	1.0.50	1.0.50	20100510-1509_dbg
7. SKAF		Stable	skaf.saske.sk	60	2	v5-34-02-1	53.67 TB	3.969 TB	49.7 TB	1.0.50	1.0.50	20100510-1509_dbg
8. SKAF_TEST				-	-		-	-	-			
9. TAF				-	-		-	-	-			
Total				**366**	**6**		**404.3 TB**	**119.2 TB**	**285 TB**			

AAF PROOF clusters

- Total 5 AAFs are running for ALICE: CAF, JRAF, KIAF, SAF, and SKAF
- Operation by local administrators supported by CERN AAF team (Latchezar, Arsen and Martin)

	Cluster					ROOT	Aggregated disk space			AF xrootd		xrootd
Name	Online	Status	Proof master	Workers	Users	Version	Total	Free	Used	Running	Latest	Version
1. CAF		Stable	alice-caf.cern.ch	114	0	v5-34-02-1	159.6 TB	8.129 TB	151.5 TB	1.0.50	1.0.50	20100510-1509_dbg
2. JRAF		Stable	jraf.jinr.ru	48	1	v5-34-02-1	7.049 TB	6.543 TB	518.6 GB	1.0.50	1.0.50	20100510-1509_dbg
3. KIAF		Stable	kiaf.sdfarm.kr	96	0	v5-34-02-1	171.9 TB	98.01 TB	73.85 TB	1.0.50	1.0.50	20100510-1509_dbg
4. SAF		Maintenance sin...	nansafmaster.in2p3.fr	48	0	v5-34-02-1	12.07 TB	2.482 TB	9.59 TB	1.0.50	1.0.50	20100510-1509_dbg
5. SKAF		Stable	skaf.saske.sk	60	0	v5-34-02-1	53.67 TB	3.969 TB	49.7 TB	1.0.50	1.0.50	20100510-1509_dbg
Total				**366**	**1**		**404.3 TB**	**119.1 TB**	**285.1 TB**			

4. Prospect

- Cooperation with Hiroshima University
- KIAF workshop
- Grid and Cluster Computing School
- LHC community conference

Cooperation with Hiroshima Univ.

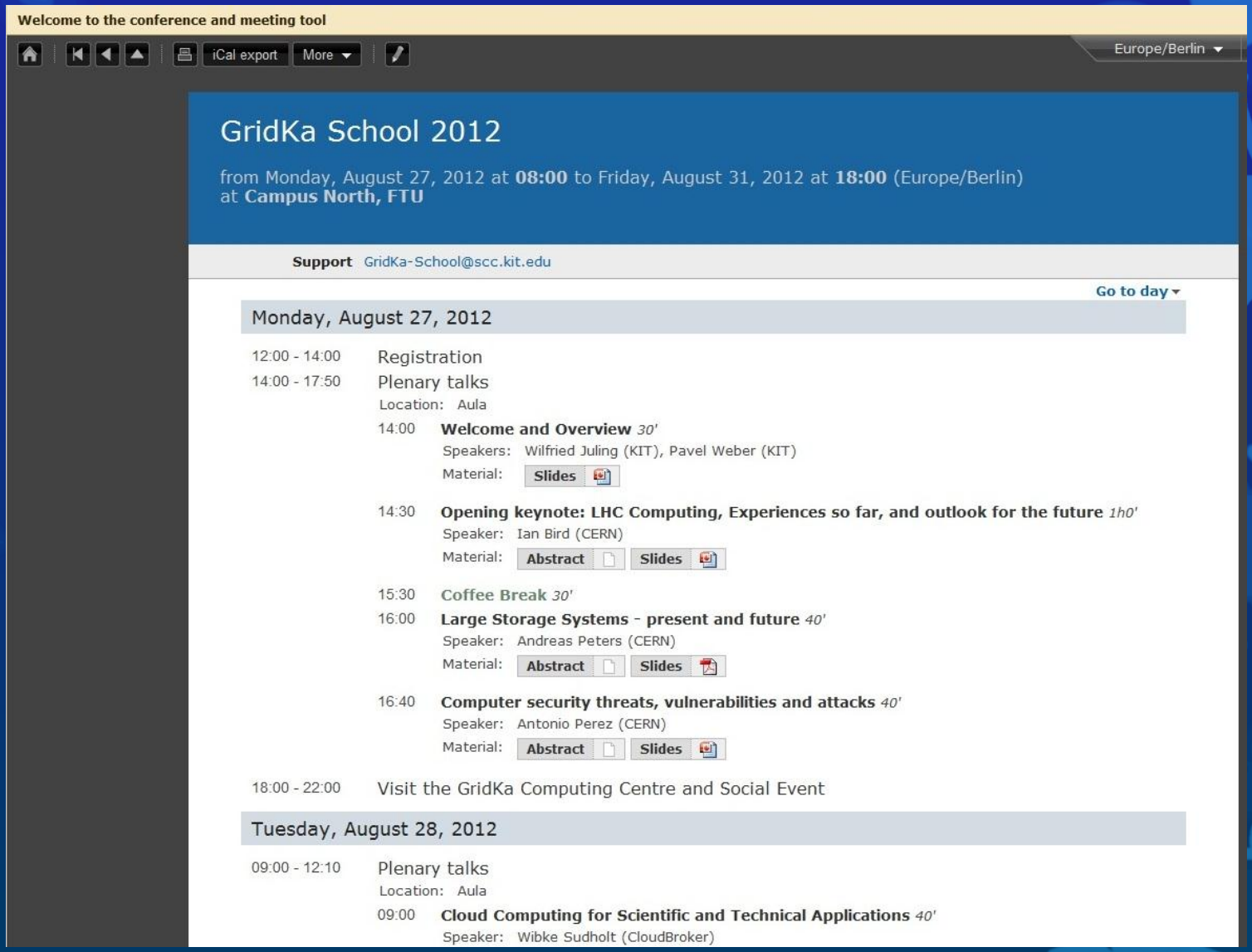
- Hiroshima University, Japan, has Tier-2 center for ALICE
- The collaborative cooperation between GSDC and Hiroshima University, sharing experience, human resources, and future prospect is desirable and on-going.
- Visiting Hiroshima University by Korean students will be staged in December.
- There will be an exchange of the memorandum of understanding between the two institutions.

KIAF workshop

- GSDC would like to organize a workshop
- By hosting Asian community
- In order to:
  - help recognize KIAF
  - support development of human resources for ALICE in Asian region
  - serve as a community hub

Grid & cluster computing school

- GSDC would like to organize a regional pilot programme
- for Grid and cluster computing school
- by benchmarking
  - GridKA School
  - CERN school of Computing


Welcome to the conference and meeting tool
iCal export
More
Europe/Berlin
GridKa School 2012
from Monday, August 27, 2012 at 08:00 to Friday, August 31, 2012 at 18:00 (Europe/Berlin)
at Campus North, FTU
Support GridKa-School@scc.kit.edu
Go to day
Monday, August 27, 2012
12:00 - 14:00 Registration
14:00 - 17:50 Plenary talks
Location: Aula
14:00 Welcome and Overview 30'
Speakers: Wilfried Juling (KIT), Pavel Weber (KIT)
Material: Slides
14:30 Opening keynote: LHC Computing, Experiences so far, and outlook for the future 1h0'
Speaker: Ian Bird (CERN)
Material: Abstract Slides
15:30 Coffee Break 30'
16:00 Large Storage Systems - present and future 40'
Speaker: Andreas Peters (CERN)
Material: Abstract Slides
16:40 Computer security threats, vulnerabilities and attacks 40'
Speaker: Antonio Perez (CERN)
Material: Abstract Slides
18:00 - 22:00 Visit the GridKa Computing Centre and Social Event
Tuesday, August 28, 2012
09:00 - 12:10 Plenary talks
Location: Aula
09:00 Cloud Computing for Scientific and Technical Applications 40'
Speaker: Wibke Sudholt (CloudBroker)

CSC 2012: 13 – 24 August, Uppsala, Sweden

Organized in collaboration with the SNIC-UPPMAX at the Uppsala University

Programme Highlights

Data Technologies

The Data theme presents the state of the art technologies and options for data storing and management in highly demanding environments. It includes security aspects relevant to data management. The theme is equally divided between lectures and practical exercise sessions.

Base Technologies

The Base Technologies theme addresses a selection of the most relevant underlying technologies: software development security, advanced networking, computer architecture as well as virtualisation / cloud computing. It also offers a range of practical exercises.

Physics Computing

The Physics Computing theme focuses on informatics topics specific to HEP. After setting-the-scene lectures, it addresses Software Engineering Techniques, and Data Analysis. The lecturers come from, Croatia, Norway, the USA and the UK to teach theory and practice.

Lecturers

François Flückiger
Robert G. Jacobsen
Sverre Jarp
Sebastian Lopienski
Pere Mato
Andrzej Nowak
Alberto Pace
Ivica Puljak
Benjamin Radburn Smith
Are Strandlie

CSC2012 Organization

Central Management	Director	Francois Flückiger
	Technical Manager	Giuseppe Lo Presti
	Administrative Manager	Fabienne Baud-Lavigne
Advisory Committee	Chair Person	Ivica Puljak
	Examination Coordinator	Ivica Puljak
	Track coordinators	Sebastian Lopienski Pere Mato Alberto Pace Ivica Puljak Arnulf Quadt

History of schools

1970	Varenna	Italy
1972	Pertisau	Austria
1974	Godöysund	Norway
1976	La Gr. Motte	France
1978	Jadwisin	Poland
1980	Vraona	Greece
1982	Zinal	Switzerland
1984	Aiguablava	Spain
1986	Renesse	The Nether.
1987	Troia	Portugal
1988	Oxford	United Kingdom
1989	Bad Herrenhalb	Germany
1990	Ysemonde	Belgium
1991	Ystad	Sweden
1992	L'Aquila	Italy
1993	L'Aquila	Italy

LHC community conference

- The LHC is located in the European continent, and the people at the LHC are mostly non-Asian.
- Nevertheless, the high energy physicists in the Asia/Pacific region are quite well qualified, motivated, and interested in the physics that may be discovered at the LHC.
- In fact, a lot of physicists of Asia/Pacific origin are actively working at the LHC in one way or another.
- And it is true that much more people are eager to participate in the LHC physics and contribute to our understanding of the Universe and the world we are living in.

APCTP

2008 LHC Physics Workshop at Korea

19-21, August, 2008, Konkuk University, Seoul

Organizers

Sun Kun Oh (Konkuk Univ, Chair)
Suyong Choi (SKKU)
Deog Ki Hong (PNU)
Pyungwon Ko (KIAS)
Gui Nyun Kim (KNU)
Seyong Kim (Sejong Univ)
Soonkeon Nam (Kyung Hee Univ)
Sang-Jin Sin (APCTP & Hanyang Univ)
Jeonghyeon Song (Konkuk Univ)

Advisors

Kiwoon Choi (KAIST)
Young Il Choi (SKKU)
Jihn Eui Kim (SNU)
Seunghwan Kim (APCTP)
In Soo Ko (Postech)
Bum-Hoon Lee (CQuEST & Sogang Univ)
Won Namkung (Postech)
Byung-Yoon Park (CNU)
Kwang-Souk Sim (Korea Univ)
Dongchul Son (CHEP & KNU)
Tiziano Camporesi (CERN)

Supported by APCTP, CHEP, CQuEST, KAIST, KICOS, PNU and Konkuk Univ

Email: sunkun@konkuk.ac.kr
Web: http://www.apctp.org/conferences/2008/lhc_pw/

APCTP

2009 LHC Physics Workshop at Korea

26-28, August, 2009, Konkuk University, Seoul

Organized by

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Pyungwon Ko (KIAS)
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Seyong Kim (Sejong Univ)
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2010 LHC Physics Workshop at Korea
10-12, August, 2010, Konkuk University, Seoul
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Gui Nyun Kim (CHEP & KNU)
Seyong Kim (Sejong Univ)
Pyungwon Ko (KIAS)
Jung-il Lee (Korea Univ)
Sun Kun Oh (Konkuk Univ, Chair)
Inkyu Park (Univ of Seoul)
Jae Mo Park (APCTP & Postech)
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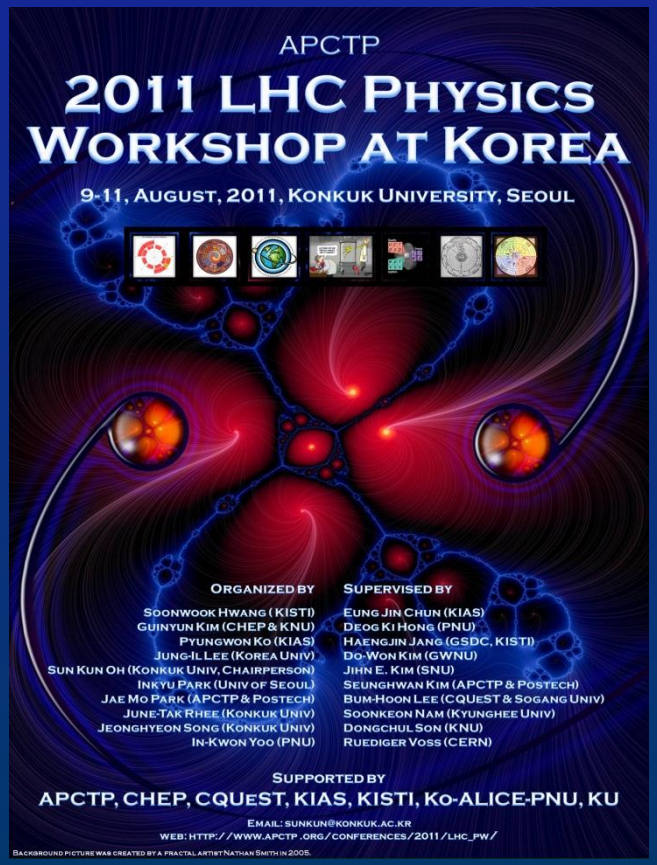
Background picture by Sven Geier (IPL, NASA) 2007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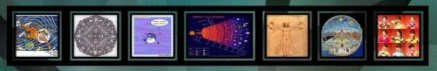
2012 LHC Physics Workshop at Korea

7 - 9, August, 2012, Konkuk University, Seoul



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Background picture created by Sven Geier (JPL, NASA) 2006

And in 2013 …


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