Alice T1/T2s workshop

Welcome !

P-E. Macchi
4 juin 2013

CC-IN2P3

Institut National de Physique Nucléaire et de Physique des Particules

Dedicated computing center

CC-IN2P3 federates the main computing resources for :

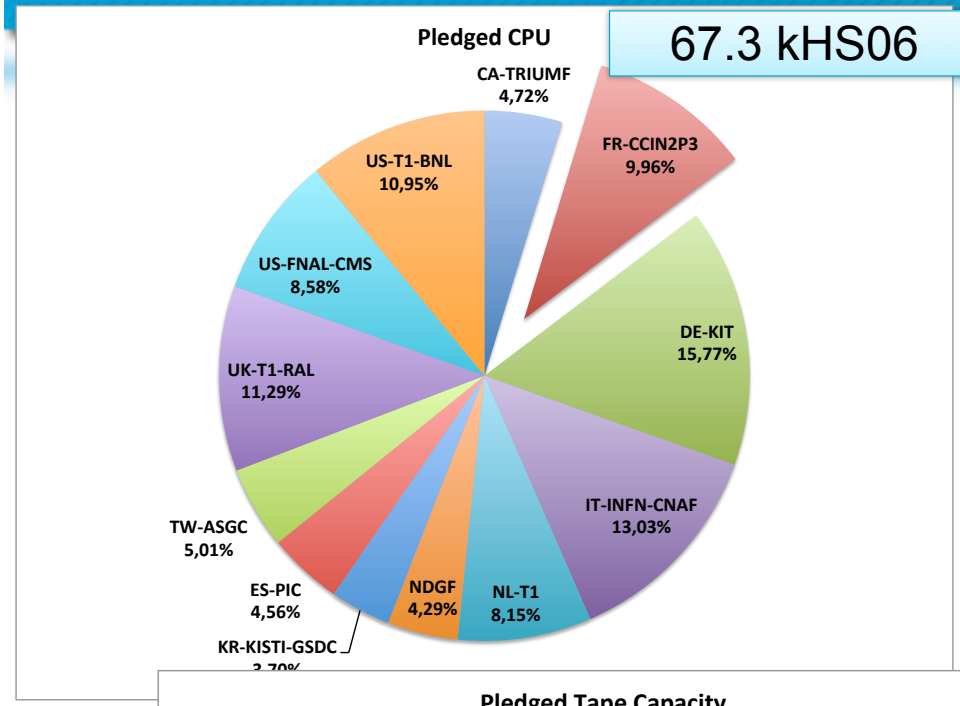
High energy physics
Nuclear physics
Astroparticle physics

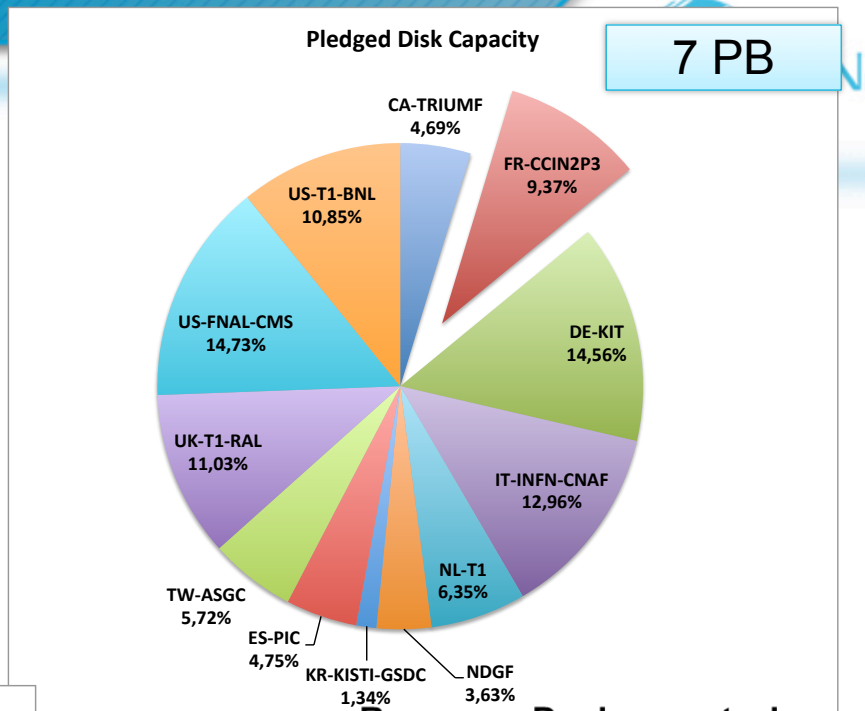
+ some opening to other sciences:

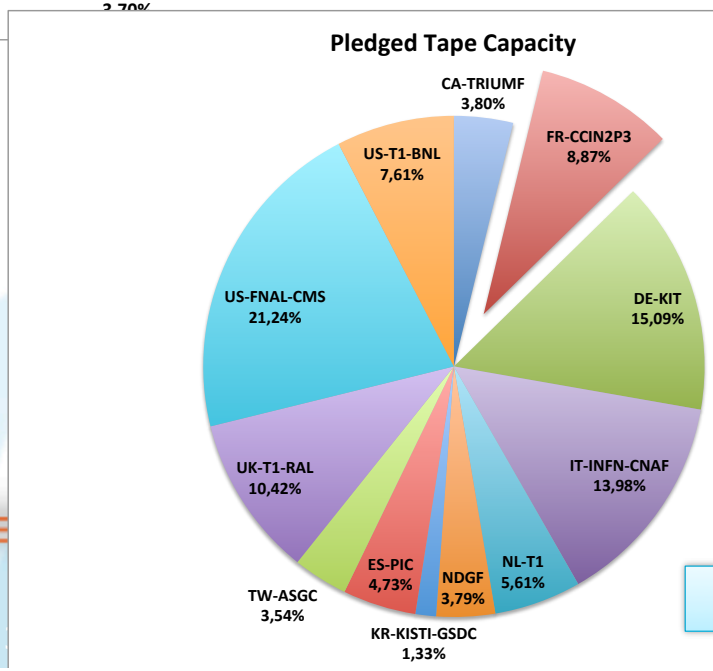
humanities
bio-computing

Staff : ~80 people ~ 60 IT engineers

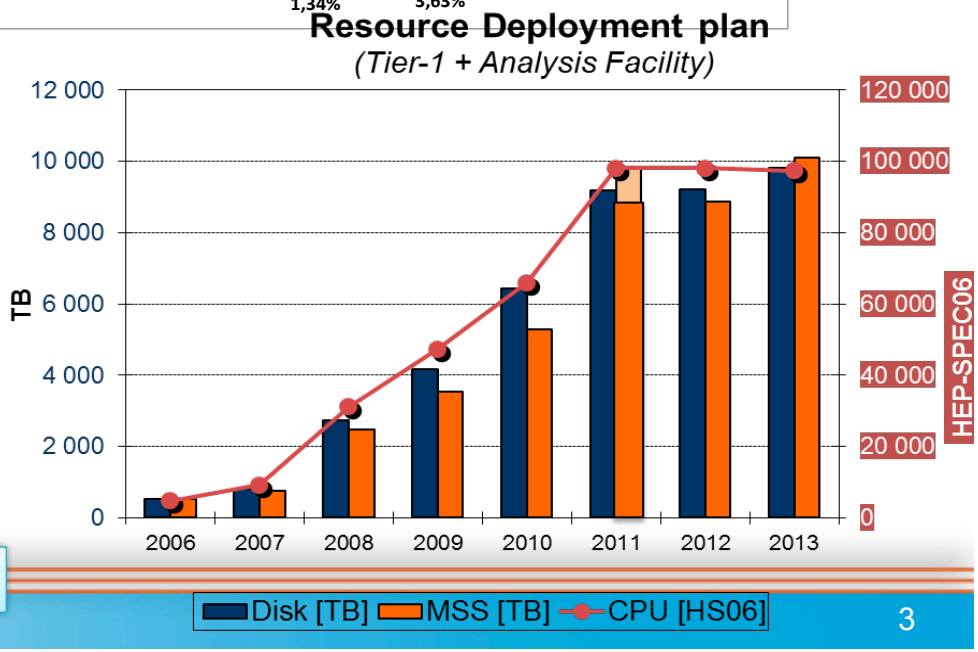
CC-IN2P3 within W-LCG in 2013







10 PB

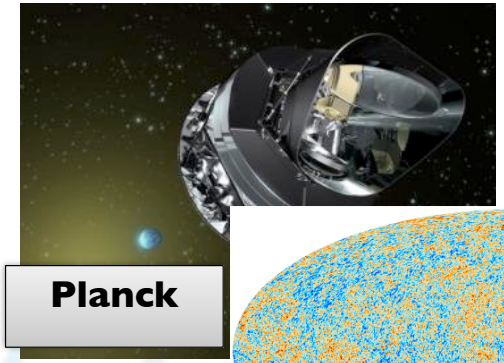


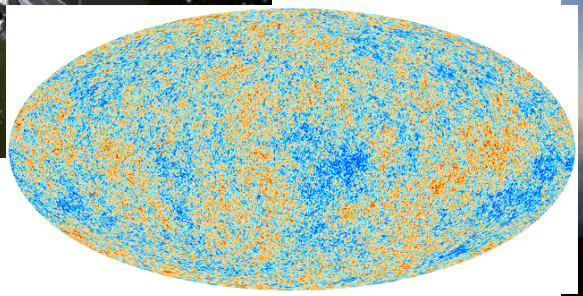

LHC


HESS

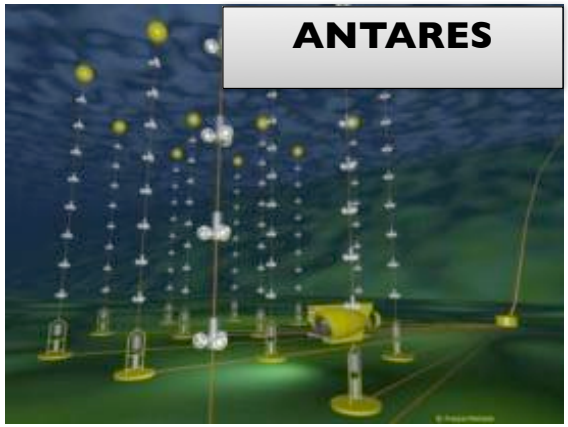

Auger


AMS


Planck

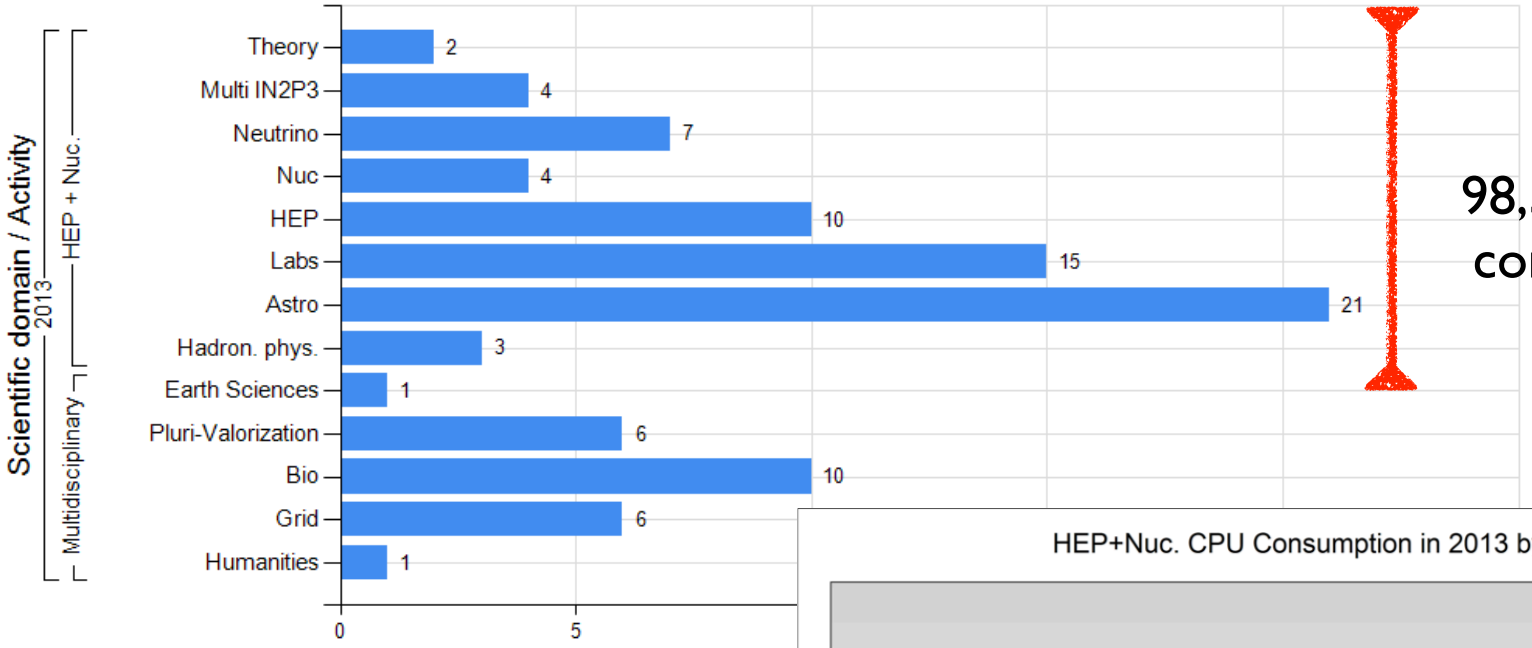



Supernovae

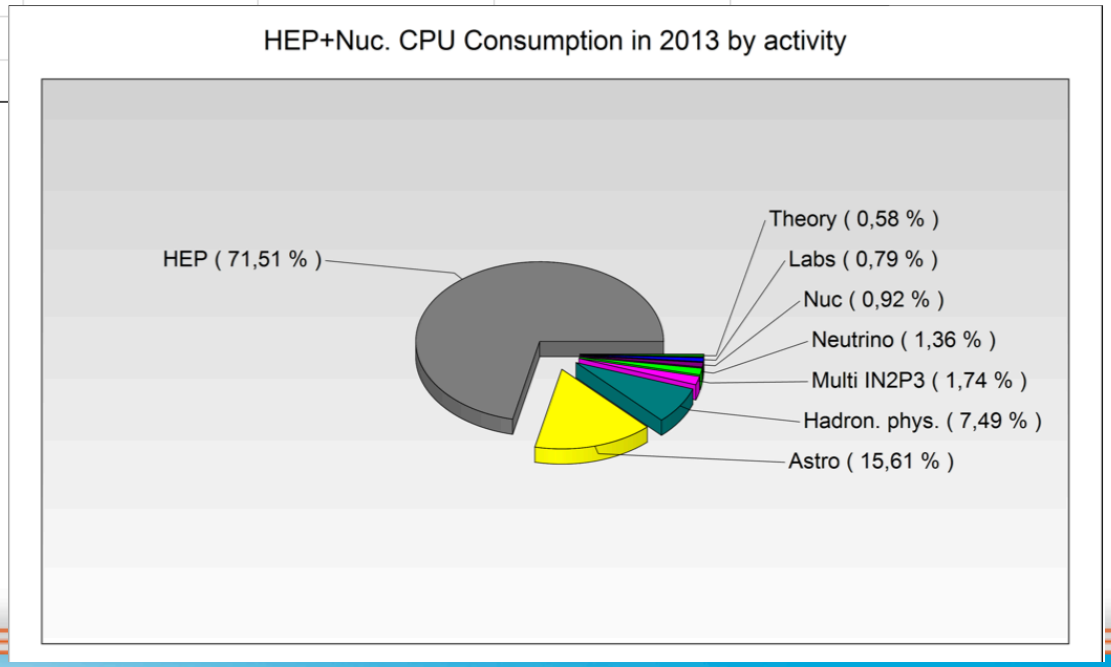

ANTARES


VIRGO

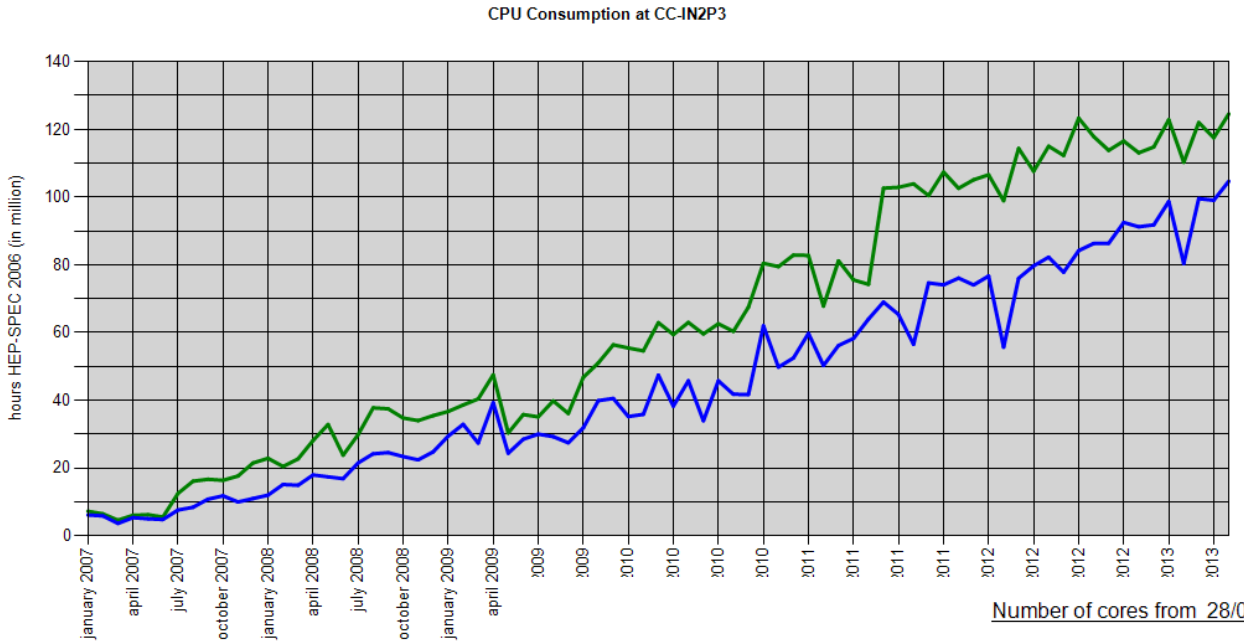
Number of groups by scientific domain and activity in 2013

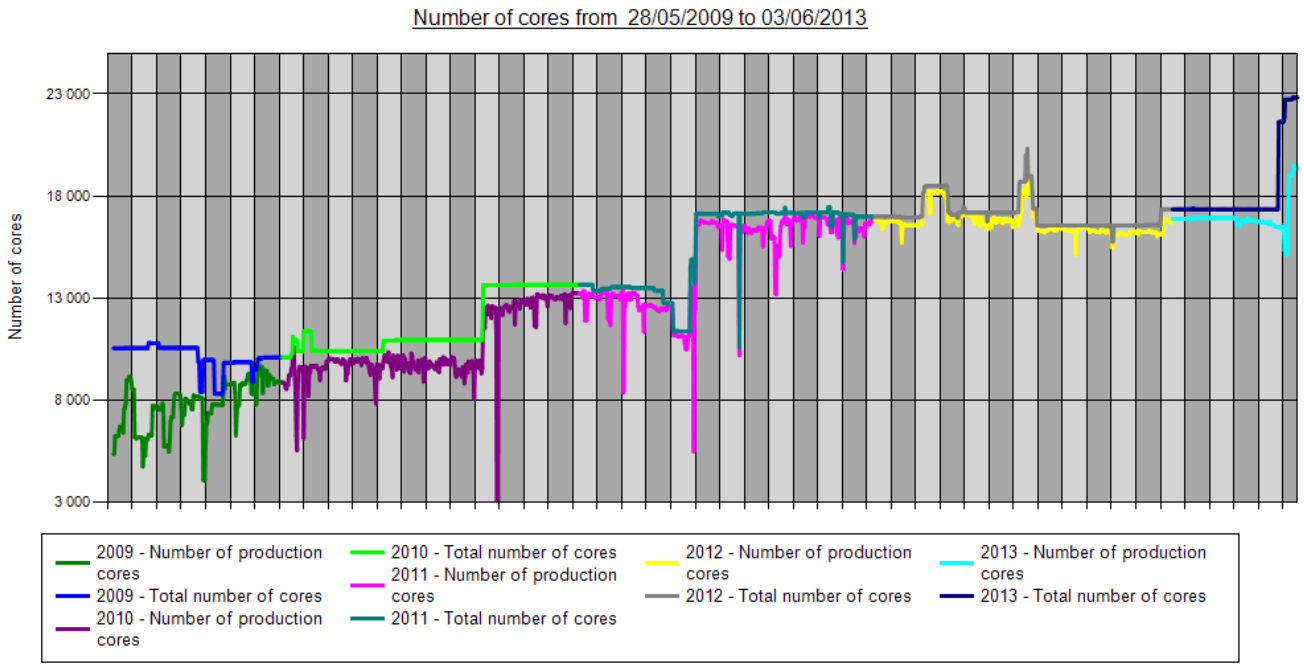


98,5% of CPU consumption



CPU


CPU Consumption at CC-IN2P3
hours HEP-SPEC 2006 (in million)
0
20
40
60
80
100
120
140
january 2007
april 2007
july 2007
october 2007
january 2008
april 2008
july 2008
october 2008
january 2009
april 2009

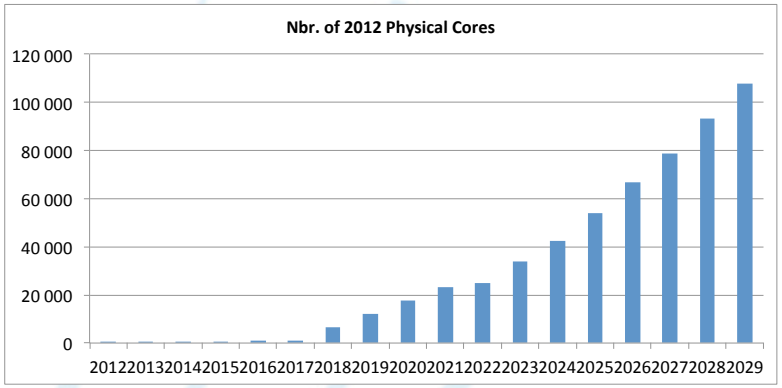

Number of cores from 28/05/2009 to 03/06/2013
Number of cores
3 000
8 000
13 000
18 000
23 000
2009 - Number of production cores
2009 - Total number of cores
2010 - Number of production cores
2010 - Total number of cores
2011 - Number of production cores
2011 - Total number of cores
2012 - Number of production cores
2012 - Total number of cores
2013 - Number of production cores
2013 - Total number of cores

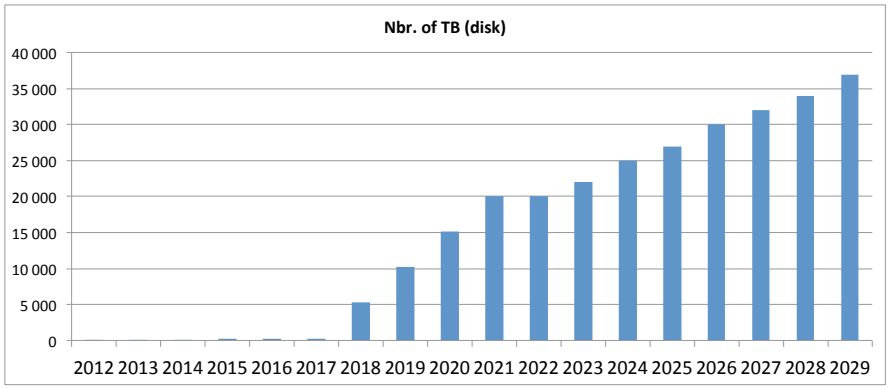
The future will be

- LHC Upgrades:

  expected growth : 20 to 25% each year after 2014 restart

- Astroparticles experiments : LSST, CTA, Euclid…





- Cloud

New building : May 2011

2011
50 racks
600 kW
Redundancy N+1
Minimum electrical autonomy

Intermediate phase
80 racks 600 kW
Partial electrical redundancy

2015
120-160 racks
1.5 MW
Redundancy N+1
Redundant HV power

2019
240 racks
3.2 MW
Redundancy N+1 and 2N
Redundant HV Power

On top of the existing 1 MW computer room

The electrical redundancy is provided by 2 independent HV power supplies – **No diesel generator**

The new computer room with its innovative and modular design is an enormous advantage for IN2P3 scientific projects

LHC upgrades
LSST - EUCLID -CTA
Academic cloud