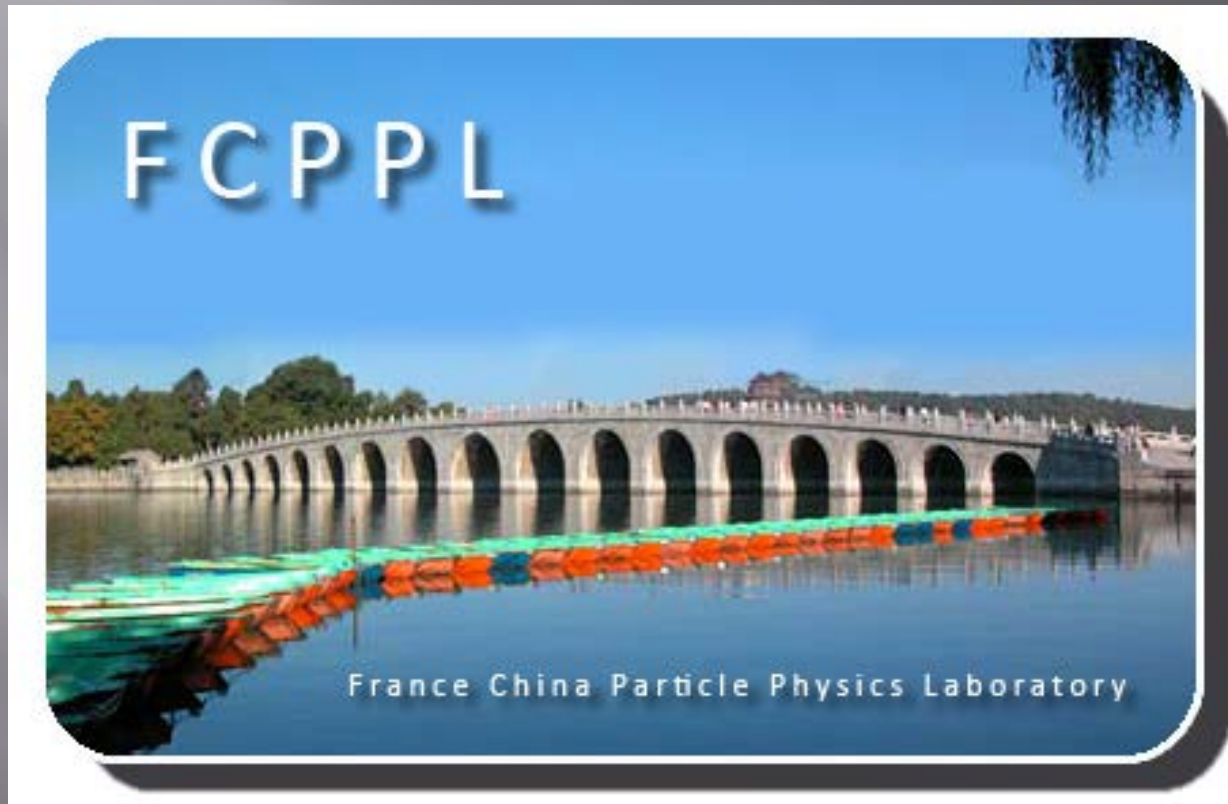


# FRANCE CHINA PARTICLE PHYSICS LABORATORY



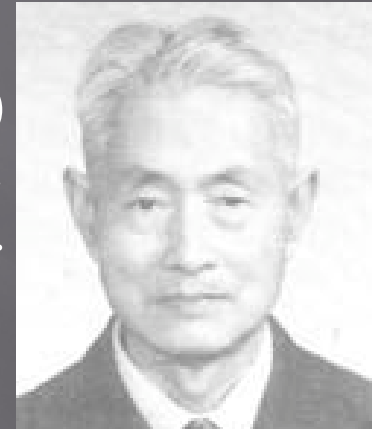
Eric Kajfasz

FJ+KPPL workshop - Bordeaux - 27 may 2014

# Franco-Chinese collaboration: a long (family) history

**SHI ShiYuan** (1908-2007)

Father of the Chinese nuclear physics...  
was a former student of Pierre and Marie Curie.



**QIAN Sanqiang** (1913-1992) and **HE ZeHui** (1914-2011)

In charge of the Chinese nuclear program...  
Collaborators of the Joliot-Curie (1946-48).

**Michel Davier,**

Member of the French Academy of Sciences & co-chair of the FCPPL  
Steering Committee with **CHEN Hesheng**, IHEP former director  
Consultant for the Beijing Electron Positron Collider (1988).



# Franco-Chinese context at the turn of the millenium

- ▣ France is a major actor Particle Physics (CERN,...).
- ▣ Increasing international opening of the Chinese community in Particle Physics.
- ▣ Political will of CNRS/IN2P3 and CEA/Irfu to intensify links and collaborations with Asia.



# FCPPL Structure

A LIA which is a bit atypical for CNRS:

A large number of partners

200 participants collaborating on ~30 research projects.

In 2007

- ▣ CNRS/IN2P3
- ▣ CEA
- ▣ Université de la Méditerranée (now Aix-Marseille Université)
- ▣ Université Claude Bernard Lyon 1
- ▣ Université Paris-Sud 11
- ▣ DAPNIA (now Irfu)
- ▣ CPPM
- ▣ CC-IN2P3
- ▣ IPNL
- ▣ LAL

- ▣ Chinese Academy of Science (CAS)
- ▣ IHEP
- ▣ USTC
  
- ▣ University of Tsinghua
- ▣ University of Beijing
- ▣ University of Shandong
- ▣ University of Nanjing
- ▣ University of Technology of Dalian
- ▣ University of Huazhong

# FCPPL Structure

In 2011

- ▣ CNRS/IN2P3
- ▣ CEA
- ▣ Aix-Marseille Université
- ▣ Université Claude Bernard Lyon 1
- ▣ Université Paris-Sud 11
- ▣ *Université P. et M. Curie*
- ▣ *Université Blaise Pascal*
- ▣ Irfu
- ▣ CPPM
- ▣ CC-IN2P3
- ▣ *IPHC*
- ▣ IPNL
- ▣ *IPNO*
- ▣ LAL
- ▣ *LPC-Clermont-Ferrand*
- ▣ *LPNHE*
- ▣ *LPSC*
- ▣ *SUBATECH*

- ▣ Chinese Academy of Science (CAS)
- ▣ IHEP
- ▣ USTC
- ▣ *NAOC*
  
- ▣ University of Tsinghua
- ▣ University of Beijing
- ▣ University of Shandong
- ▣ University of Nanjing
- ▣ University of Technology of Dalian
- ▣ University of Huazhong

# How FCPPL works

- ▣ FCPPL supports collaborative projects, funding for mobility between the F/C teams
- ▣ The goal is to increase and reinforce the collaborations between F/C teams
- ▣ The teams are strongly encouraged to setup co-directed/supervised theses between a Chinese and a French University

# How FCPPL works

- ▣ The direction of the LIA is shared between France and China
- ▣ The Administrative headquarters of the LIA FCPPL is located in Marseille (CPPM)
  
- ▣ FCPPL workshops are held on a yearly basis once in China and once in France.
  - Last workshop was held in Clermont-Ferrand: there were 125 participants with a good balance between Chinese and French physicists.
- ▣ The last day of the workshop the Steering Committee convenes to discuss the current status of the LIA and its prospects.
- ▣ It also deals with the selection of the proposals to be financed.
- ▣ We aim at having the workshop in March-April so that the projects have enough time to spend their allotted budget by the end of the year

# How FCPPL works



2014 FCPPL Workshop



# How FCPPL works

## Call for Proposals Processing:

- Document describing the project, the collaborators and the budget
- For pluriannual projects, in addition to the request for the current year, report on what has been achieved in the current year.
- For each proposal, there are two reviewers (1 Chinese, 1 French), evaluating the quality of its scientific case and management.
- Whenever possible, the projects are strongly encouraged to setup co-directed/supervised theses between a Chinese and a French University.
- Depending upon the size of the project, the number of participants, and the overall budget available, the allotted budget can vary between 1kEu and up to 7-8 kEu
- Given the fact we have a fair amount of co-directed theses, since 2013, we have been awarding the FCPPL PhD Prize for the best co-directed thesis.
- A nice trophée and 500Eu are awarded to the winner of the competition. In 2013, an ATLAS thesis won the prize, in 2014 an ALICE one did.

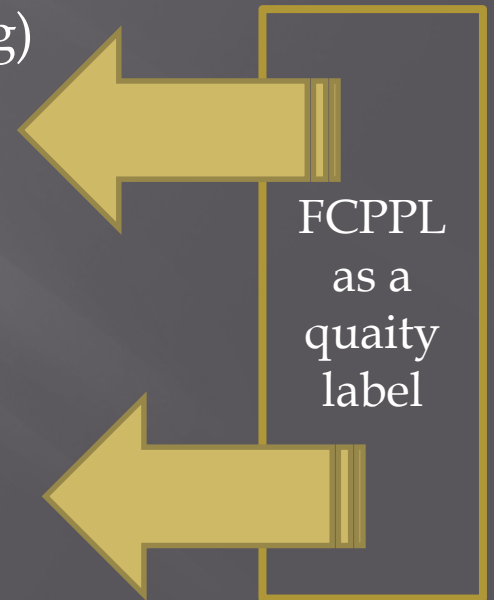
# How FCPPL works



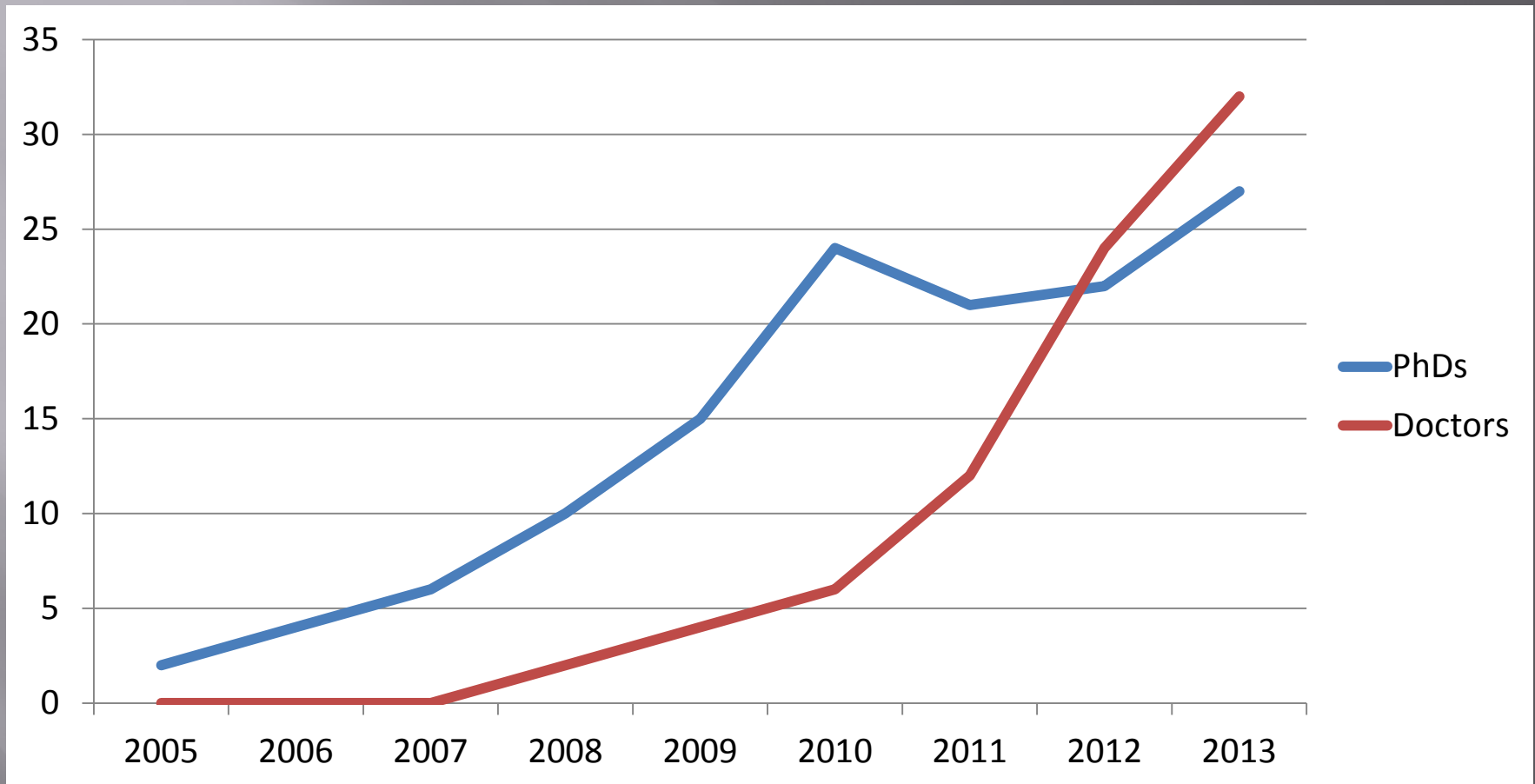
2014 FCPPL PhD Prize

# Funding of the FCPPL projects

- ▣ Selected projects:
  - 50% France (IN2P3, CEA, DRI CNRS, Universities,...)
  - 50% China (CAS, NSFC, Universities,...)
- ▣ Grants for PhDs & postdocs:
  - CSC-FCPPL agreement (17 grants, 10 on going)
  - CAS-CNRS grants (4 grants)
  - Eiffel grants (3 grants, 2 on going)
  - ...
- ▣ External programs:
  - Cai Yuan Pei
  - CNRS PICS
  - CNRS-NSFC, CNRS-CAS agreements
  - ...



# Co-PhDs in FCPPL

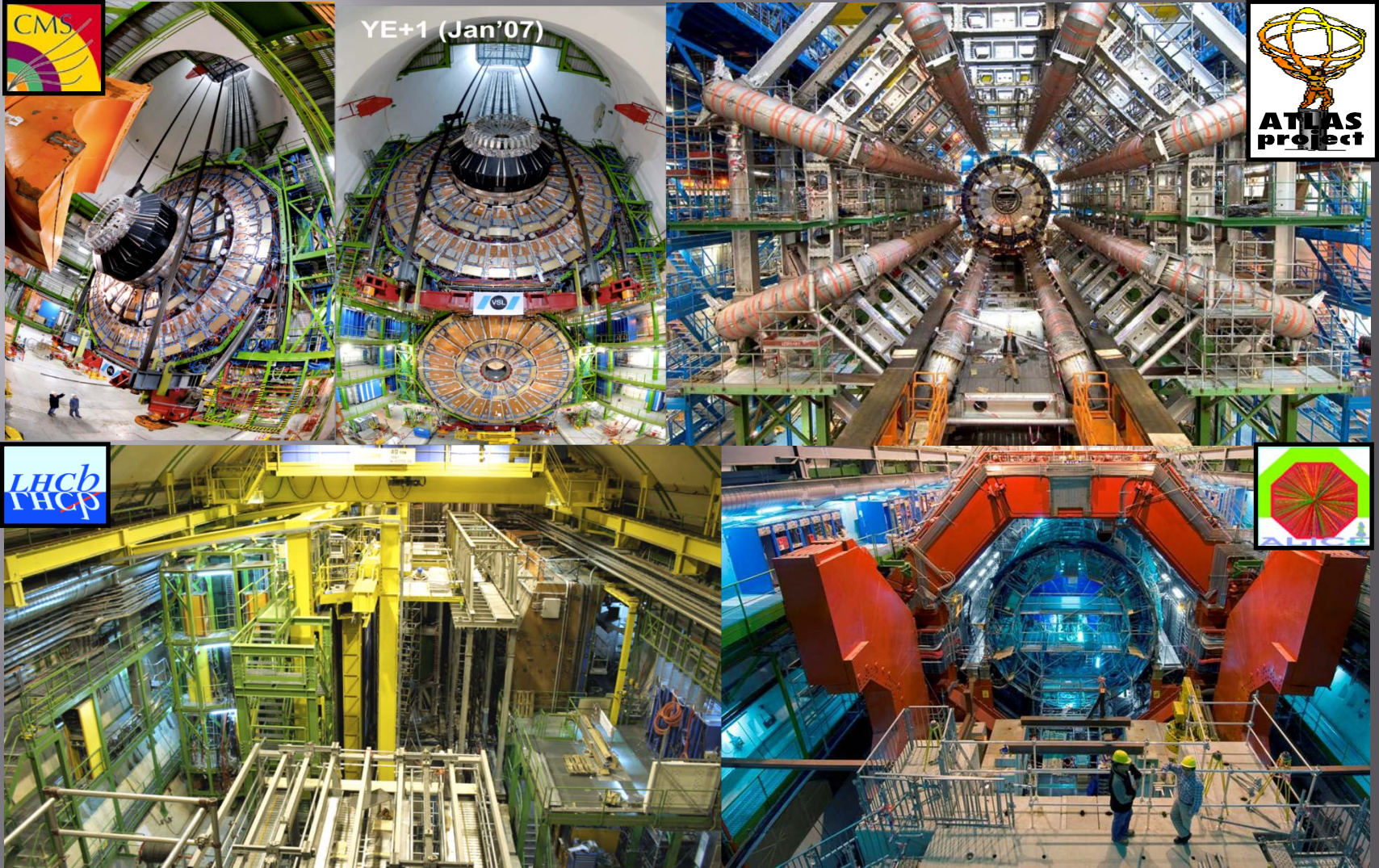


2013 projection : 27 PhDs and 32 Doctors "made in FCPPL"

# Research activities @ FCPPL

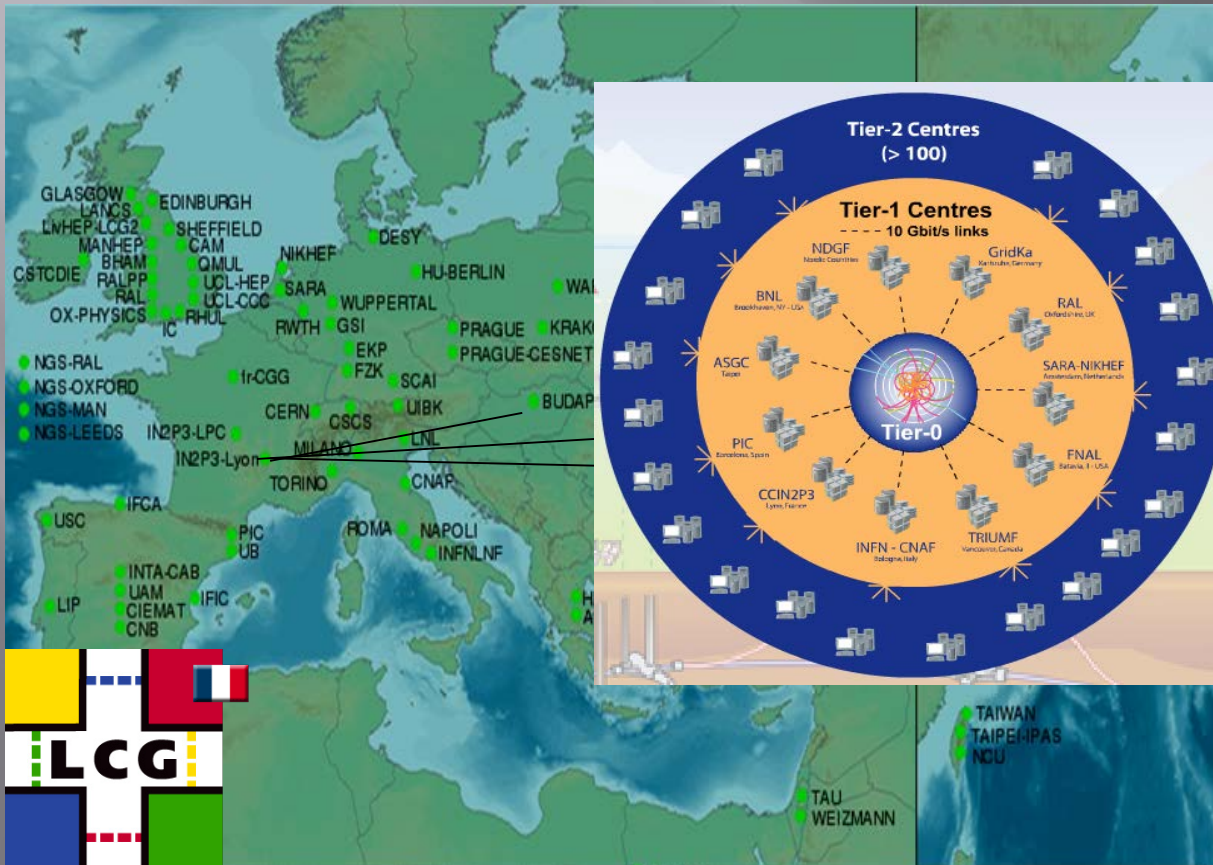
	Labs	Leaders	
Exp. PP	ATLAS	LAL / ACC	ZHANG Zhiqing / CHEN Shenjian
		CPPM / ACC	MONNIER Emmanue / SHAN Jin
		CPPM / ACC	ROZANOV Sacha / WANG Zheng
		LPNHE / USTC	MARCHIORI Giovanni / LIU Yanwen
		LPSC / Lhanzhou	LLIERES Annick / REN Zhongliang
	CMS	IPNL / IHEP	GASCON-SCHOTKIN Suzan / CHEN Guoming
	ALICE	LPC / Wuhan	BASTID Nicole / ZHOU Daicui
	LHCb	LAL / TSU	ROBBE Patrick / GAO Yuanning
	WLCG	Irfu / IHEP	LANCON Eric / CHEN Gang
Theory PP	BES	LAL / IHEP	DAVIER Michel / YUAN ChengZheng
	New physics	IPNL / STU	Cacciapaglia Giacomo/WANG Qing
	Exotic hadrons	IPNL / IHEP	RICHARD Jean-Marc / ZHAO Qiang
	Quarkonium	IPNO / IHEP	LANSBERG Jean-Philippe / WANG JianXiong
AP & Cosmo	Dark Energy	CPPM / TSU	TAO Charling / WANG Xiaofeng
	Dark matter	Irfu / TSU	GERBIER Gilles / YUE Qian
	TREND	LPNHE / NAOC	MARTINEAU Olivier / WU XiangPing
	QUBIC	APC/IHEP	Hamilton Jean-Christophe / Zhang Xinmin
	JUNO-IPHC	IPHC/IHEP	Marco Dracos/YANG Chenggen
	JUNO-APC	APC/IHEP	CABRERA Anatael/ WANG Zheng
	LHAASO	IPNO / IHEP	SUOMIJAARVI Tiina / CAO Zhen
	ILC - source	IPNL / IHEP	CHEVALIER Michel / PEI Guoxi
	ILC - GRPC	IPNL / TSU	LAKTINEH Imad / WANG Yi
	ATF2	LAL/IHEP	BAMBADE Philip / GAO Jie
R&D Accelerators Detectors	Optical resonator	LAL / TSU	ZOMER Fabian / TANG Xuanchiang
	Pixel sensor	IPHC/SDU	Winter Marc / WANG Meng
	Computing	CC-IN2P3 / CPPM/ IHEP	Tsaregorodtsev Andrei / CHEN Gang
	R&D detectors 1	Irfu/TSU	ALEKSAN Roy / GAO Yuanning
	R&D detectors 2	LLR/IHEP	BOUDRY Vincent / RUAN Manqi
	Asics	LAL / IHEP	DE LA TAILLE Christophe / WANG Zheng

# Research activities @ FCPPL



# Research activities @ FCPPL

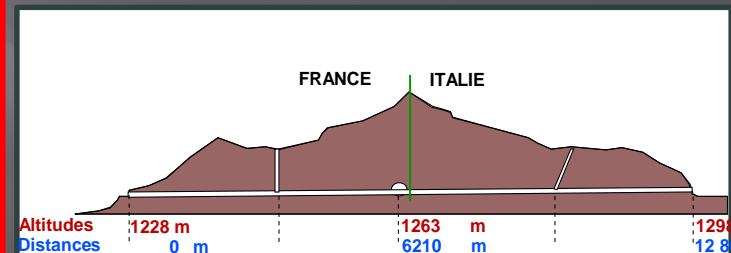
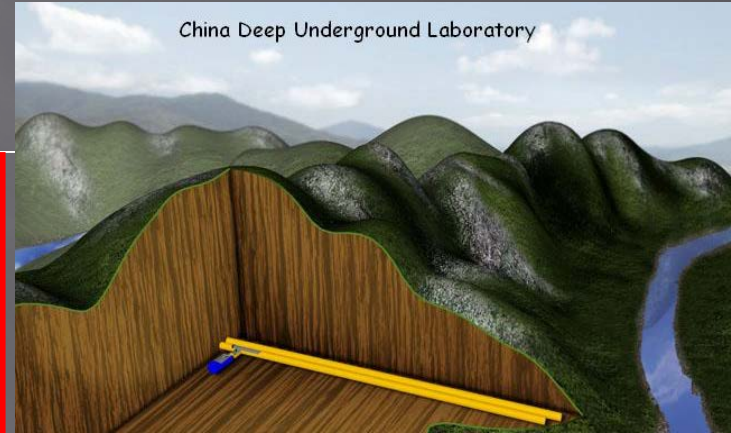
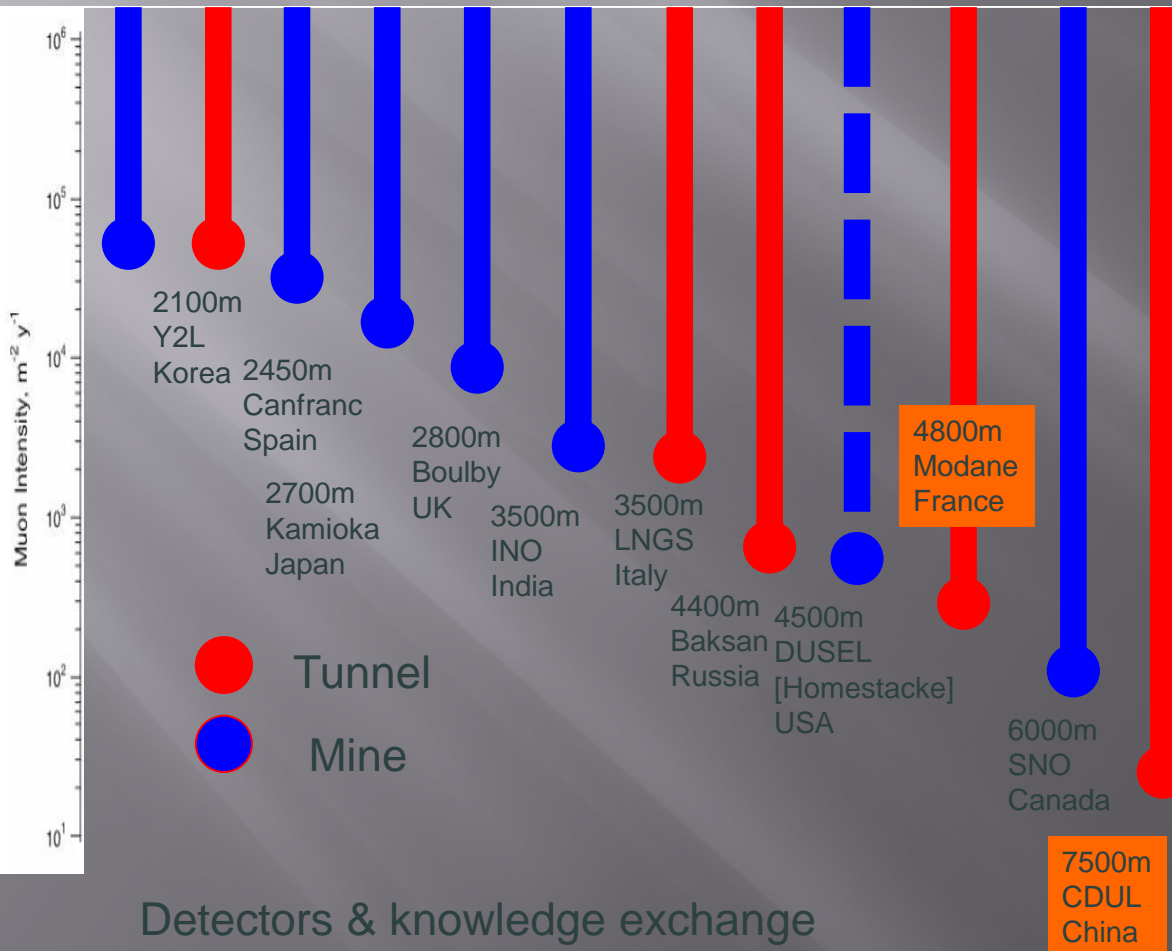
- Computing GRID for CERN experiments and beyond...



- IHEP Computing Center is linked to CC-IN2P3.
- F. Hernandez (IN2P3) @ IHEP on a SST position.

# Research activities @ FCPPL

## CDUL & Modane Laboratories

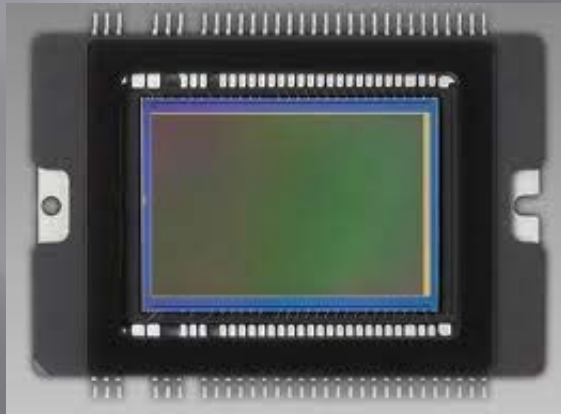


Detectors & knowledge exchange



# Research activities @ FCPPL

- ▣ Collaboration Strasbourg – Dalian on developments of CMOS detectors aiming at the next generations of experiments and/or accelerateurs.



# The FCPPL community

- ▣ FCPPL is a very active and dynamic network
- ▣ stable and strongly implanted in the physicists communities in both countries.
  - 200 members, active in all fields of research
  - Some of the FCPPL collaborations go back to 2005.
  - Yearly Workshop (100+ participants).



Structure favorable for developing new collaborations

- ~50% of the projects in 2011 were directly linked to the existence of the FCPPL network.

# The FCPPL community



# FCPPL: Situation today

- ▣ A extremely fruitful and active collaboration since many years .... But the LIA agreement ends soon
- ▣ Some issues related to limited funding & tools for researchers/interns stays beyond a few weeks
- ▣ Rapidly evolving research landscape in China
  - JUNO
  - CEPC
  - SVOM
  - LHAASO
  - ...

# FCPPL: the future

- ▣ Consensus to move to a better established structure than a LIA
- ▣ Driving concepts:
  - Physical & legal existence
  - Tools to welcome French researchers in China for longer periods (1 month to several years)
  - Keep FCPPL's topics diversity to maintain our community alive.
- ▣ We are currently trying to find the optimal structure that would allow us to keep and increase even more the momentum and success of our collaborations