



**CHN & FRA**

60th Anniversary of Diplomatic Relations Between China and French  
中法建交60周年暨中法文化年系列活动

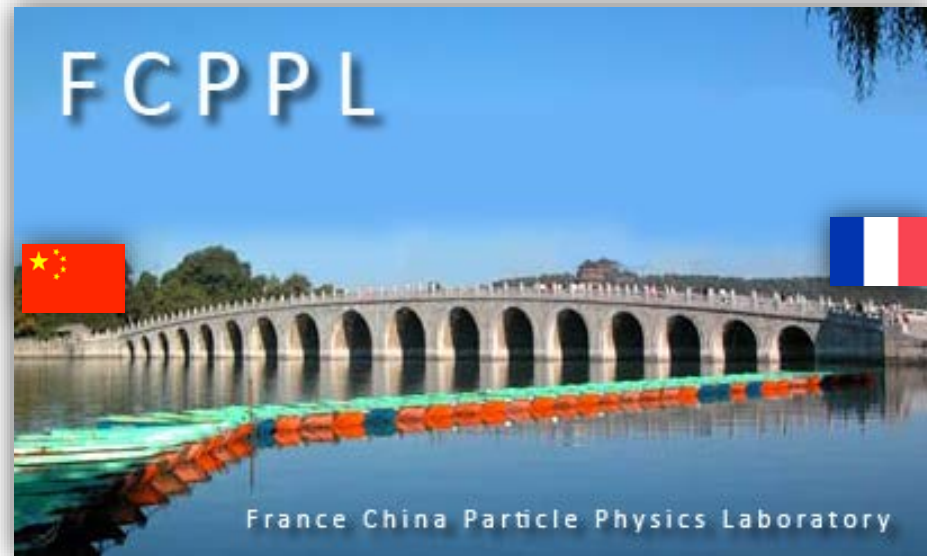


**Paving roads  
for progress and peace**

**A solid bridge**

(over quiet waters ;-)

**for scientific collaborations  
in High Energy Physics  
and cultural exchanges  
between our two countries**





# A long-standing history of collaboration in subatomic physics



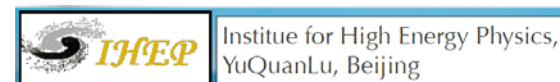
in a nutshell...

**SHI Shiyuan (1908-2007)**  
*“Father” of Chinese Nuclear Physics*  
Last student of Pierre & Marie Curie

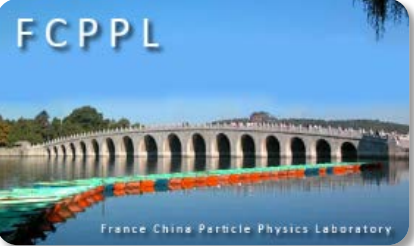


**QIAN Sanqiang (1913-1992) et HE Zehui (1914-2011)**  
*In charge of the Chinese nuclear program*  
Collaborators of the Joliot-Curie (1946-48)

**CHEN Hesheng (Chinese Academician)**  
former IHEP Director  
**Michel Davier (French Academician)**  
*Advisor for the  
Beijing Electron Positron Collider*  
(1988)



**BEPC & BES and upgrades**



# France China Particle Physics Lab

Internat. Associated Lab (LIA) -> Internat. Research Network (IRN)

## 中法粒子物理实验室

Strengthen and structure France-China collaboration in particle physics and associated fields



FCPPL created on 10 Apr 2007, renewed in Apr 2011, again in Apr 2015 and as FCPPL in 2024

FCPPL Steering Committee chaired by academicians CHEN Hesheng & Michel DAVIER

FCPPL Directors: SHAN Jin [IHEP] & Lydia ROOS [CNRS/LPNHE] (2007 – 2011)

CHEN Gang [IHEP] (2011 – now) & Olivier MARTINEAU [CNRS/LPNHE] (2011 – 2017)

Eric KAJFASZ [CNRS/CPPI] (2017 – now)

Admin. HQ: Esthere GARNIER (up to 2019), Brigitte PANTAT (2019-2024), Paola BERTELLI (2024-now) at CNRS/CPPI

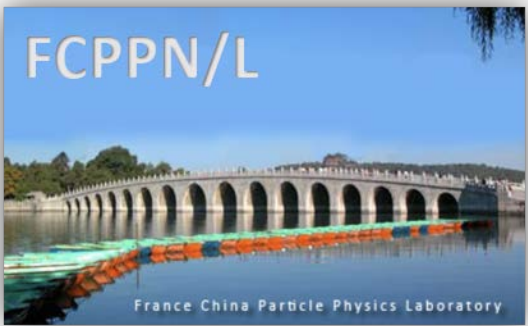
# France China Particle Physics Lab (FCPPL)

## Numbers and Facts

- **Web site (TWiki):** [fcpppl.in2p3.fr](http://fcpppl.in2p3.fr)  
**Mailing-list:** [FCPPL-L@in2p3.fr](mailto:FCPPL-L@in2p3.fr) (over 460 members!)
- **Funding:** ~ 200k€/yr (FR/CN ~ 1)  
for mobility and exchange - *all sources included*  
~ 30 collaborative projects funded each year
- **Yearly Workshop:**
  - 5 day long
  - 100+ participants
  - lively, dynamic and friendly community



**Beijing (IHEP)**  
**12/2006**  
**(to prepare FCPPL)**



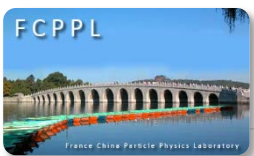
**Marseille, 01/2008**  
**Wuhan, 03/2009**

**Lyon, 04/2010**  
**Jinan, 04/2011**  
**Orsay-Saclay, 03/2012**  
**Nanjing, 03/2013**  
**Clermont-Ferrand, 04/2014**

**Hefei, 04/2015**  
**Strasbourg, 03/2016**  
**Beijing (THU), 03/2017**  
**Marseille, 05/2018**

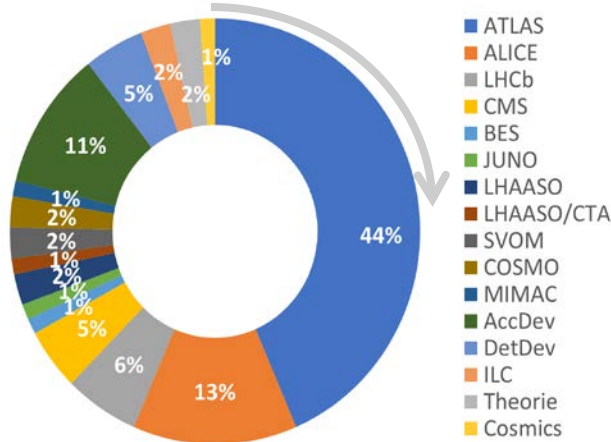


**Shanghai, 04/2019**  
**Zoom, 12/2021**  
**Zhuhai, 11/2023**  
**Bordeaux, 06/2024**  
**TBD, 2025**

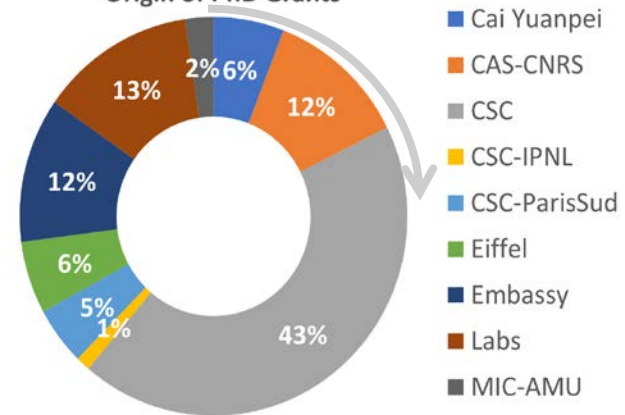


# 2005-2018: 85 Shared PhD Students

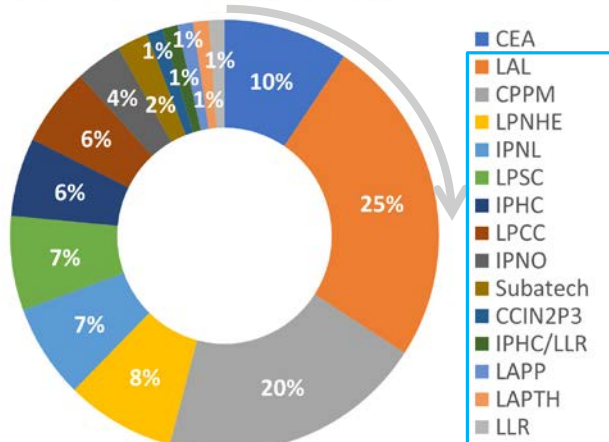
SHARED PhDs ON PROJECTS



Origin of PhD Grants

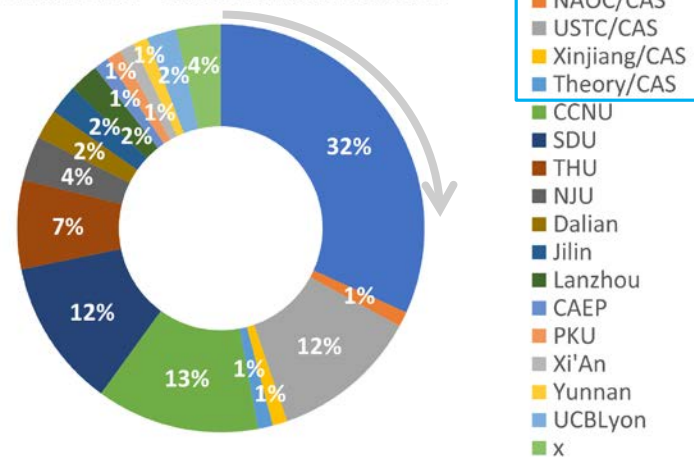


Shared PhDs - French Institutes involved



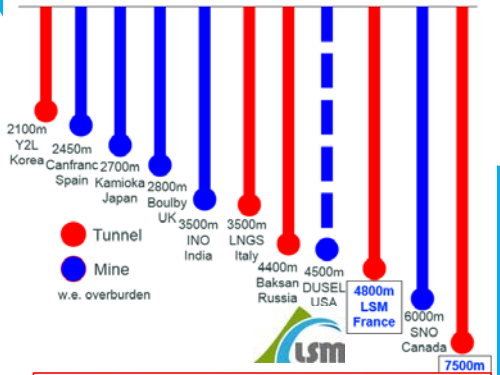
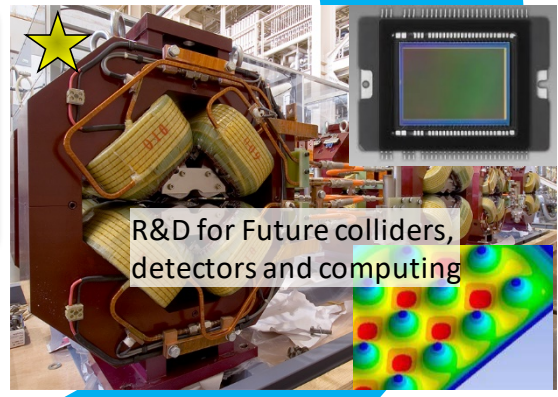
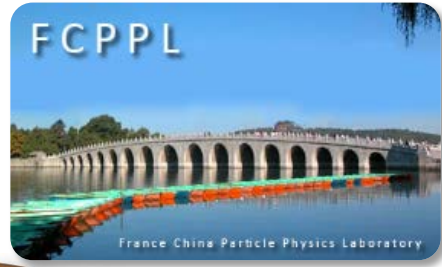
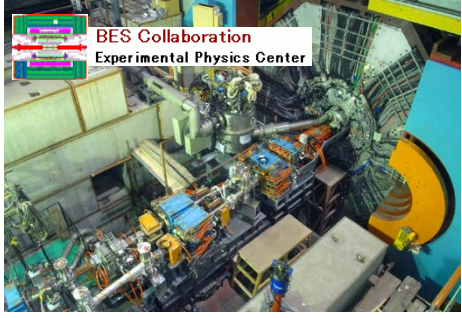
(\* ) Not all "co-tutelles"

Shared PhDs - Chinese Institutes involved

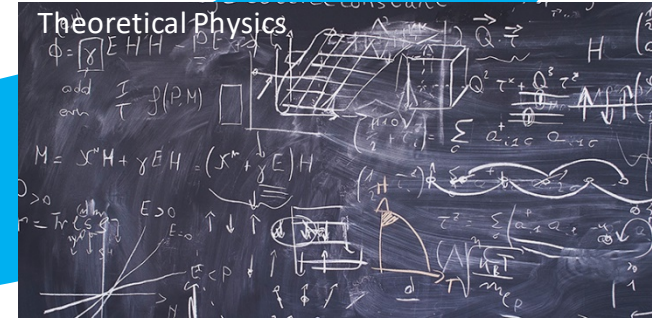
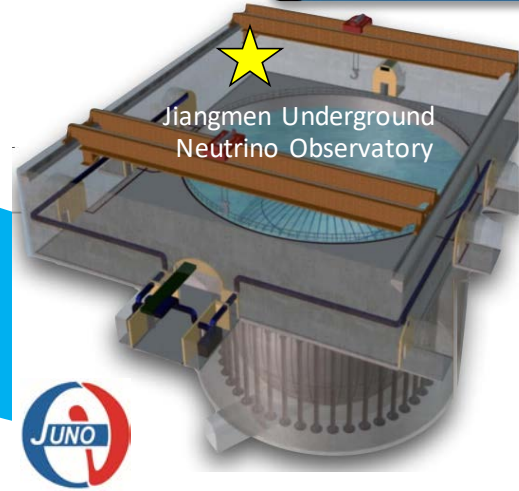


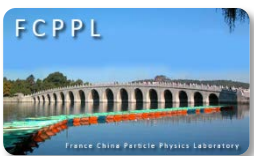
Since 2018: 11 more shared PhD Students

# From Underground up to Space



中国锦屏地下实验室 CJPL  
China Jinping Underground Laboratory





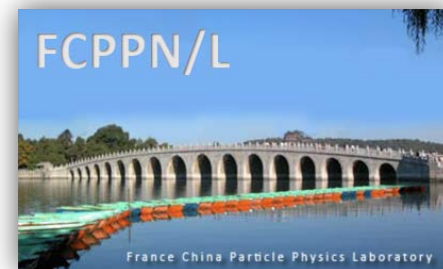
# The Future (1)...



**FCPPL is a great success!**

encouragement for our community to solidify even further the collaborative activities which are specifically hosted in China

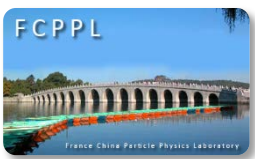
**LIA agreement needed to be renewed and transformed**





# FCPPL -> FCPPN/L

- **The aim of the new joint structures is to promote the cooperation between France and China** in particle and astroparticle physics between research groups from about **18 French laboratories (14 universities)** from **all over France** and research groups from **CAS** and from about **23 major universities in China**.
- **Relevant research fields have a broad spectrum:** Particle and Hadronic Physics, Neutrino Physics, Astroparticle Physics and High Energy Astrophysics, Cosmology, Accelerator Physics, together with Theoretical Physics and (accelerator-, detector-, computing-) related technologies to participate in collaborative efforts to better understand the physics of our Universe.
- **The IRN allows the partners to work together with the best research infrastructures in our fields, to name just a few:** LHC experiments at CERN, KM3NeT in France and Italy, LSM (Laboratoire Souterrain de Modane) in France; JUNO (Jiangmen Underground Neutrino Observatory), CJPL (China Jinping Underground Laboratory), LHASSO and GRANDE in China; SVOM a common Franco-Chinese space mission, ...
- **In 2024, FCPPL is evolving into FCPPN/L an International Research Network (IRN) combined to an International Research Lab (IRL) hosted on the IHEP Campus in Beijing.** A new combined Research Structure involving over 460 collaborators all over China and France

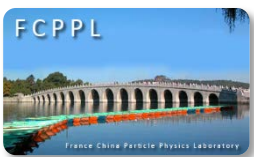


# The Future (2)...

## Proposal of a IRL (International Research Laboratory), a genuine joint research unit:

- **The IRL (FCPPL) will be connected to the IRN (FCPPN)**
- Located in Beijing (IHEP) and based on a CAS-CNRS agreement to which universities will connect
- Taking our collaboration on developments and experiments in our fields of research hosted in China to an unprecedented level
- The IRL is expected to allow the community to go further than with the network FCPPN on:
  - a number of projects specifically requiring long term presence of French scientists/engineers in China in the fields of:
    - Neutrinos Physics: JUNO but also
    - Astroparticle Physics:  
Neutrino submarine detectors Cosmic/Gamma Rays, Dark Matter
    - Developments for future colliders and detectors
  - access to funding programs not possible with an LIA or an IRN
- Would be a pioneering experience for CNRS for these fields of research
- Currently being worked on...





# LIA FCPPL - A very successful and going-strong collaborative structure

## Partners involved in the current agreement (quite atypical structure)

- **CNRS IN2P3 (CCIN2P3) with :**
  - **10 Universities :** Aix Marseille (CPPM), Bordeaux (CENBG), Clermont Auvergne (LPCC), Grenoble Alpes (LPSC, LSM), Lyon 1 (IPNL), Nantes (Subatech), Pierre et Marie Curie (LPNHE), Paris Diderot (APC, LPNHE), Paris Sud (IPNO, LAL), Strasbourg (IPHC)
  - **1 Observatory:** Observatoire de Paris (APC)
  - **2 Schools of Engineers :** Polytechnique [X] (LLR, OMEGA), Mines de Nantes (Subatech)
- **CEA** (Irfu ; APC)
- **Chinese Academy of Sciences [CAS] :** IHEP (Beijing) – NAOC (Beijing) – USTC (Hefei)
- **6 Universities :** Peking U. [PKU], Tsinghua U. [THU] (Beijing)  
Shandong U. [SDU] (Jinan)  
Nanjing U. [NJU] (Nanjing)  
Shanghai Jiaotong U. [SJTU] (Shanghai)  
Central China Normal U. [CCNU] (Wuhan)

