

# China-ASEAN Education Forum

## 中国-东盟教育合作论坛



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**As the Chinese would say, I  
will throw bricks and hope to  
draw jades from you!**

抛砖引玉





**ASEAN**

**600 Million**



**China**

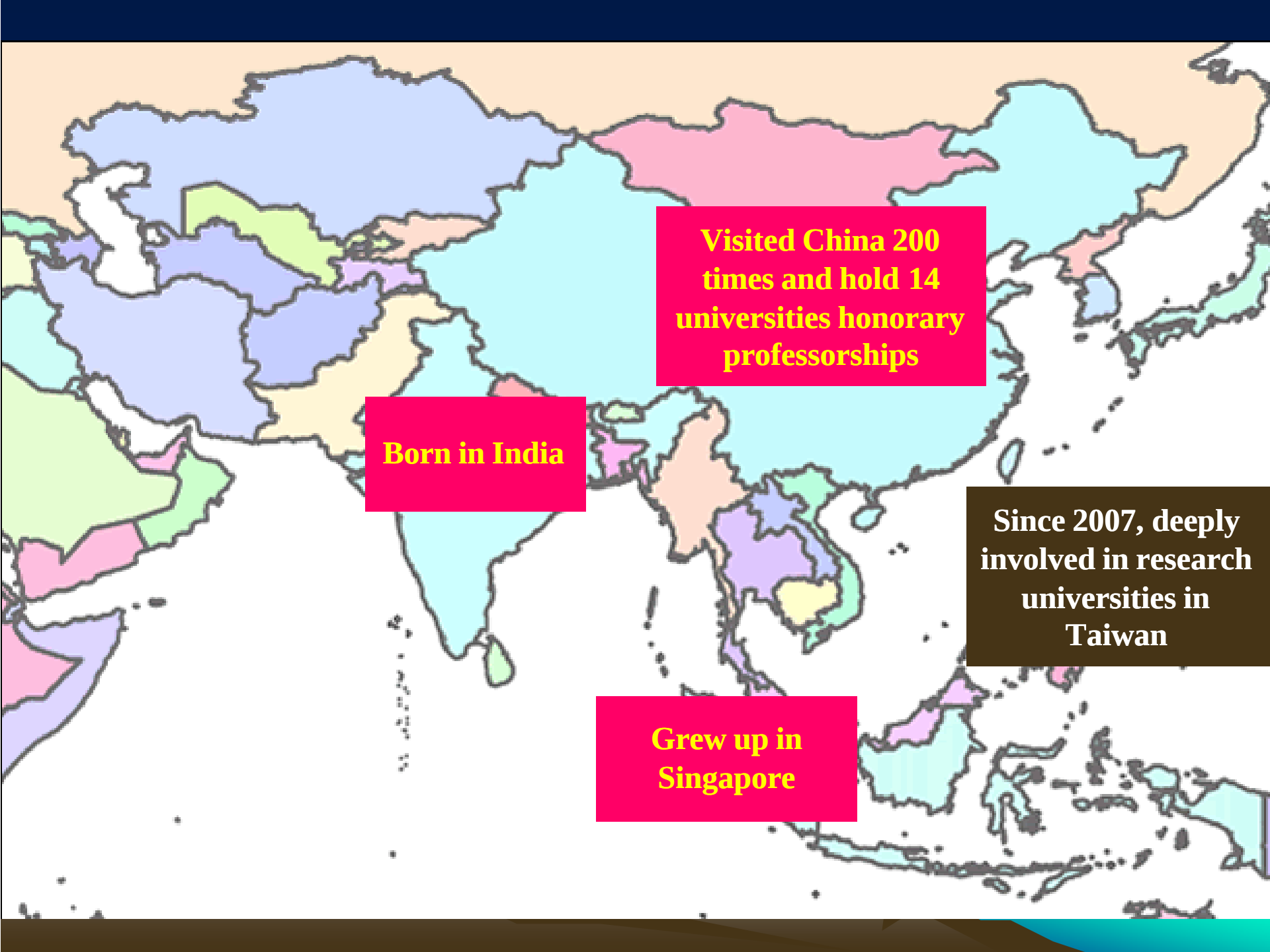
**1332 Million**

**Challenges  
Facing Asia  
Pacific  
Research  
Universities  
in the 21<sup>st</sup>  
Century**



**Why am I here?**





**Visited China 200  
times and hold 14  
universities honorary  
professorships**

**Born in India**

**Since 2007, deeply  
involved in research  
universities in  
Taiwan**

**Grew up in  
Singapore**

**My personal experiences,  
not wisdom, bestow me  
hopefully with some  
unconventional views  
which I hope could  
interest you.**



**First, it is intriguing  
that I am now in  
Hsinchu's Tsing Hua  
University.**



**1911** 清華學堂(北京)

**Tsing Hua College (Beijing)**

**1925** 國立清華大學(北京)

**National Tsing Hua University (Beijing)**

**1938-1946** 國立西南聯合大學(昆明)

**National Southwest Union University  
(Kunming)**

**1946-1949** 國立清華大學(北京)

**National Tsing Hua University (Beijing)**

**1949-now** 清华大学(北京)

**Tsinghua University (Beijing)**

**1956-now** 國立清華大學(新竹)

**National Tsing Hua University (Hsinchu)**



# Beijing Tsinghua and Hsinchu Tsing Hua have nearly the same emblem!



# 清華學校校歌

汪覺翔先生撰歌

何林一夫人作

(Eb 調 C)

1 13 5 5 | 6 16 5 5 | 3 3 53 1 | 6 1 2 5 —

(一) 西山蒼蒼東海茫茫吾校莊嚴巍然中央

(二) 左圖右史鄴架巍巍致知窮理學古探微

(三) 器識爲先文藝其從立德立言無間西東

6 6 61 5 | 3 2 32 1 | 2 5 54 5 | 6 6 76 5 | 1̣. 1̣ 6 1̣

東西文化薈萃一堂大同爰躋祖國以光莘莘學子  
新舊合冶殊途同歸肴核仁義聞道日肥服膺守善  
孰紹介是吾校之功同仁一視泱泱大風水木清華

5. 6 5 — | 6. 6 5 3 | 2 23 5 — | 1. 1 1 3 | 2 32 1 —

來遠方莘莘學子來遠方春風化雨樂未央  
心無違服膺守善心無違海能卑下衆水歸  
衆秀鍾水木清華衆秀鍾萬烟如一矢以忠

6. 6 3 | 2 23 1 — | 1̣ 1̣ — 0 | 6 6 — 0 | 5 5 6 5

行健不息須自強 自強 自強 行健不息  
學問篤實生光輝 光輝 光輝 學問篤實  
赫赫吾校名無窮 無窮 無窮 赫赫吾校

2 3 5 — | 1̣ 1̣ — 0 | 6 6 — 0 | 5 5 6 5 | 2 32 1 —

須自強 自強 自強 行健不息須自強  
生光輝 光輝 光輝 學問篤實生光輝  
名無窮 無窮 無窮 赫赫吾校名無窮

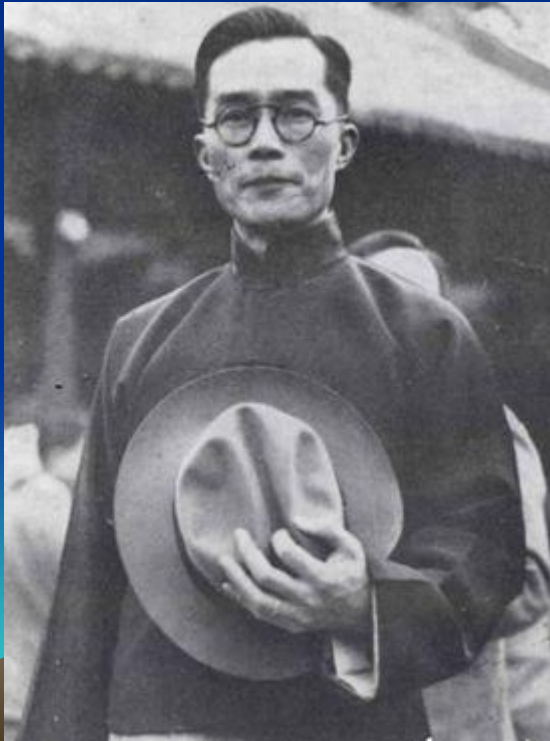
(一九二四年三月十八日下午十二點半第一次全體練習)  
二十三日三點一刻正式合唱)

# Same University Song

# Eternal President Mei Yiqi for Beijing Tsinghua and Hsinchu Tsing Hua

1938 – 1949

1955 – 1962





## 清華百年校慶 兩岸同步慶祝

【本報綜合報導】兩岸昨天同步慶祝清華大學100周年校慶，馬英九總統與中國國家主席胡錦濤在各自出席己方校慶紀念會時，均發表談話，兩人都認為大學校園的國際化程度仍不夠，與國際一流學校仍有差距，仍需努力。



**The broad and  
deep relationship  
between Beijing  
Tsinghua and  
Hsinchu Tsing  
Hua gave me  
somewhat the  
necessary  
acredential to  
speak here today.**



**Asia Pacific region had  
undergone and is still  
undergoing metamorphic  
transformation in the  
latter part of the 20<sup>th</sup>  
century and certainly in  
the 21<sup>st</sup> century!**



# First example: Economic Defragmentation!



# ASEAN and China Free Trade Zone (10+1) Jan 1, 2010



**Also under discussion is 10 + 3 or  
ASEAN + China+Korea+Japan**



**Second example of  
transformation:  
Geographical  
defragmentation of  
ASEAN**



**As of today, there is  
perception and reality of  
ASEAN nations are  
geographically  
fragmented!**



# ASEAN is indeed geographically fragmented



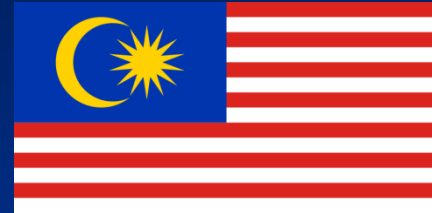
**21<sup>st</sup> century will see a  
defragmentation of  
ASEAN!**



# Kunming (昆明) – Singapore (新加坡) High-speed rail to be completed in 2020



# Indonesia and Malaysia



## **Indonesia**

**Population: 230 million**

**GDP: \$4000 (2008 estimate)**

## **Malaysia**

**Population: 28 million**

**GDP: \$15,000**





**June 15, 2011**



**YUDHOYONO, (through translator): Yes, I realize that infrastructure is a particular challenge for our investment climate. Because of this, in the next five to 10 years, we have plans to prioritize infrastructure development. Be it ports, airports, transport, power plants, and other infrastructure that is needed.**

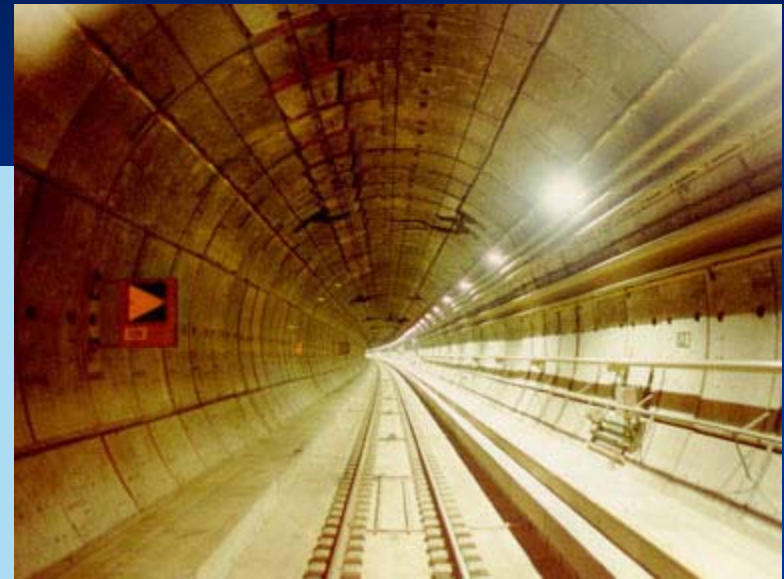
**On July 8, I met with Tan Sri Ghauth Jasmon, Vice Chancellor of the University of Malaya, flagship university of Malaysia's research universities.**



**Vice Chancellor Ghauth Jasmon of the University of Malaya told me, which was confirmed by my Google search, that Malaysia and Indonesia are considering constructing an underwater tunnel between the two closest points between Malacca and Sumatra. The distance between these two points is a mere 38 kms.**

A stylized, dark brown silhouette of a mountain range is positioned at the bottom of the slide, spanning the width of the image. The background of the slide is a gradient of blue, transitioning from a darker shade at the top to a lighter, cyan shade at the bottom.

**UK-France 50 kms**  
**Malacca – Sumatra 38 kms**



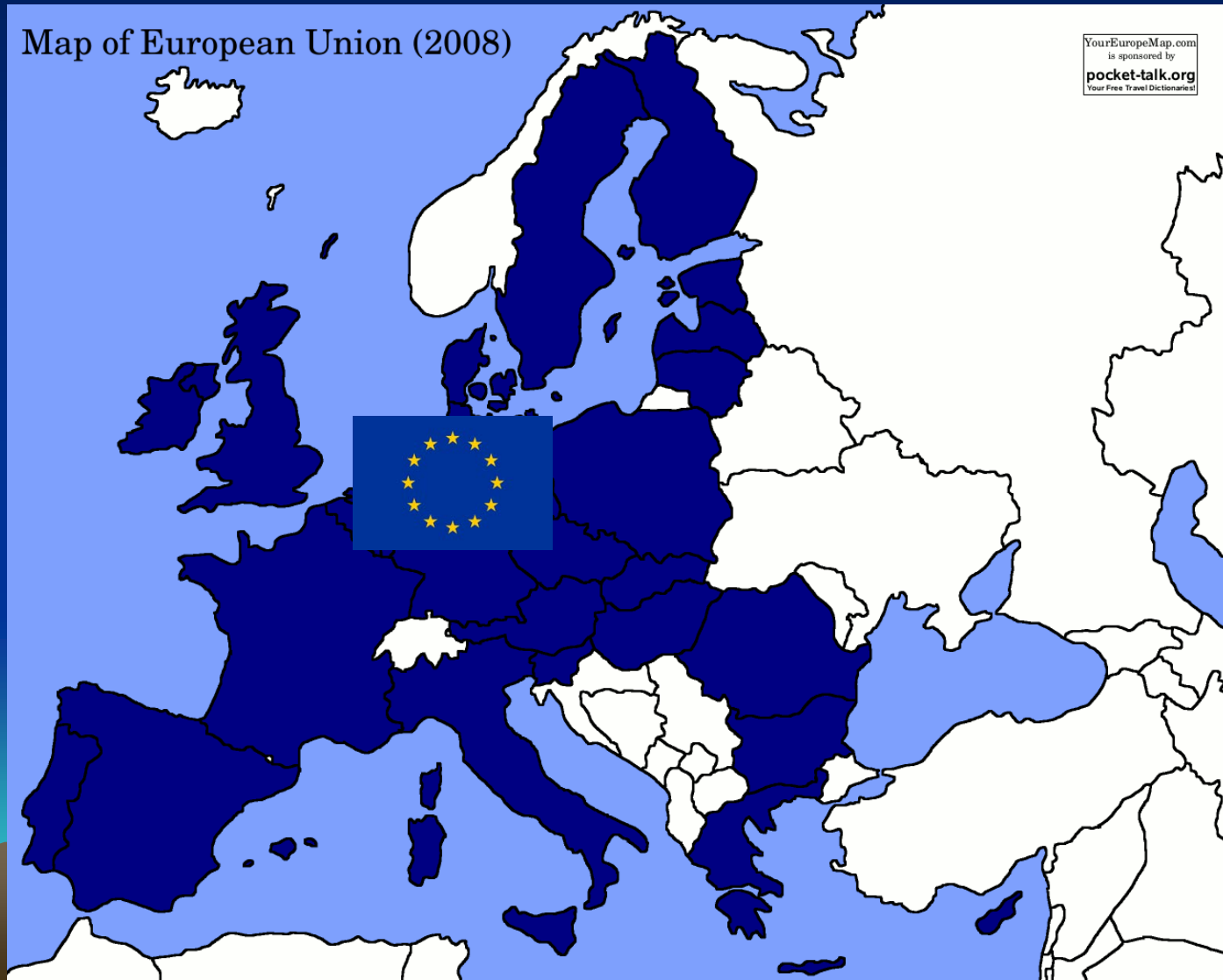
# Shortest distance is 38 kms



**When all these  
developments and  
constructions become  
reality, Asia Pacific will no  
longer be geographically  
fragmented.**



# European Union



**One major advantages of  
European nations  
becoming European Union  
is because they are not  
geographically  
fragmented.**



**So with de-fragmentation  
of Asia Pacific in the “near”  
horizon, surely there will be  
metamorphic  
transformation of  
economic, political, even  
cultural landscapes!**



**Third Example of  
Transformation:  
Large Scale Scientific  
Collaborations of China  
and ASEAN in 21<sup>st</sup>  
century?**



# **Building of Research facilities in Asia Pacific for basic research and applied research**



**Oct 16, 1988** Beijing Electron positron collision was realized at the BEPC. Started as basic research, then spin-off to applied research



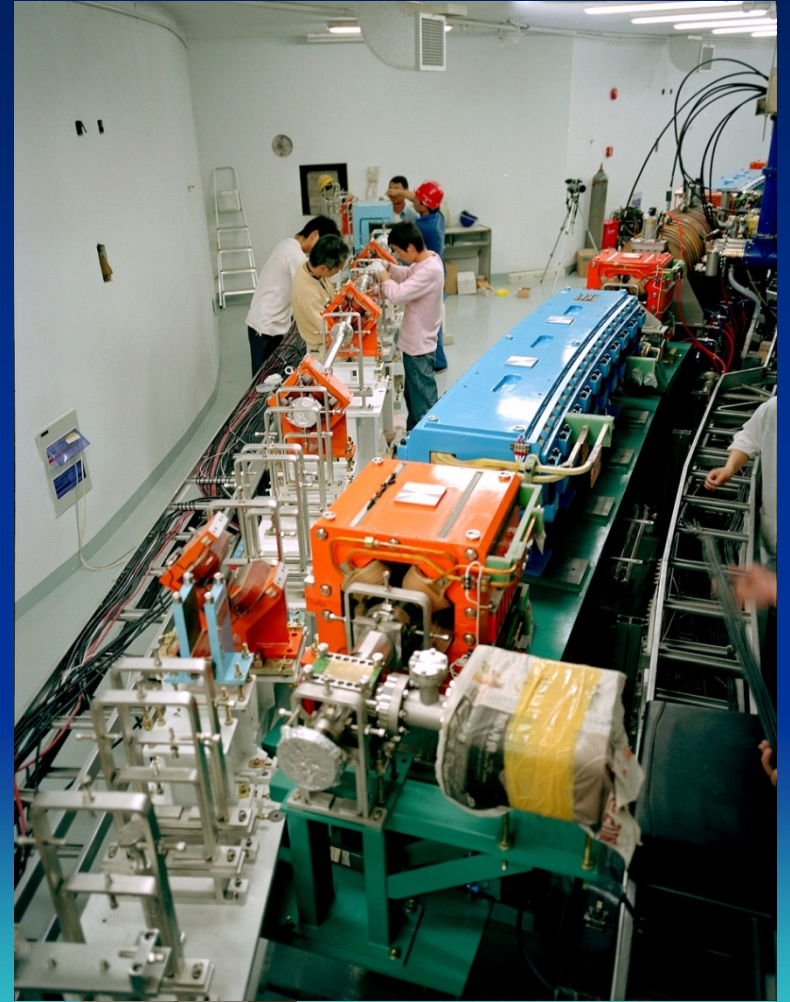
# Hsin Chu Light Source 1993



# Shanghai Synchrotron Radiation Center (2007)

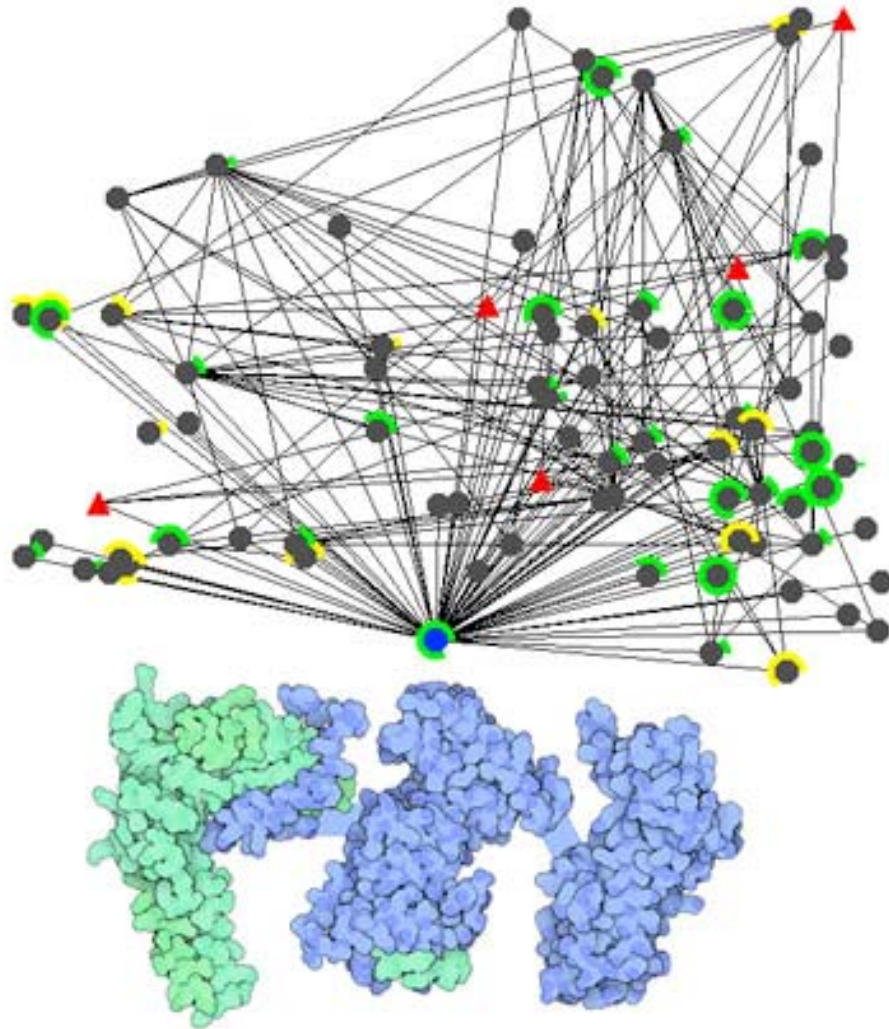


# Shanghai Synchrotron Facility



# Taiwan Photon Source - 2014





**Protein  
crystallographic  
studies with  
synchrotron  
facility**

**Heavy Ion Research Facility in Lanzhou (HIRFL), the Radioactive Ion Beam Line in Lanzhou (RIBLL) 2007**



# Crab Nabula 蟹皇星

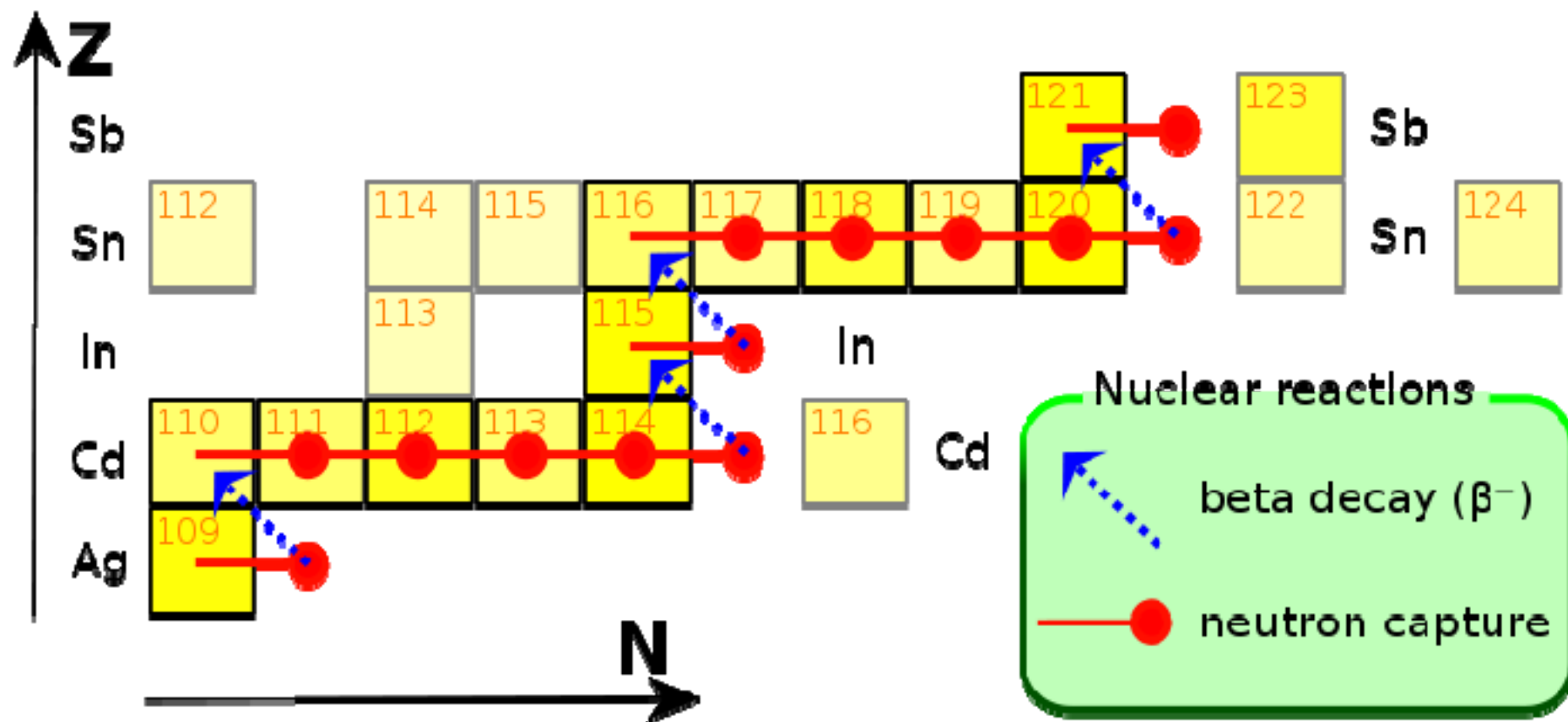


1054

(observed by  
Chinese and  
Arab  
astronomers)

# Nuclear Astrophysics





**Daya Bay Nuclear Power Plant also serves as a neutrino detection facility**



**Xiangdong Ji,  
Shanghai Jiaotong University**

**PandaX” A Dark Matter Experiment in  
Sichuan, China** In the southwest of  
Sichuan China, a deep underground  
tunnel provides an unprecedented  
opportunity to build one of the deepest  
science and engineering labs in the  
world. search.



**These are some of the facilities currently under construction or constructed in Asia Pacific. However, they are all “national” facilities. They are state-of-the-art facilities for basic and applied sciences!**



**GLOBAL (全球)**

**Not**

**INTERNATIONAL**

**(國際)**



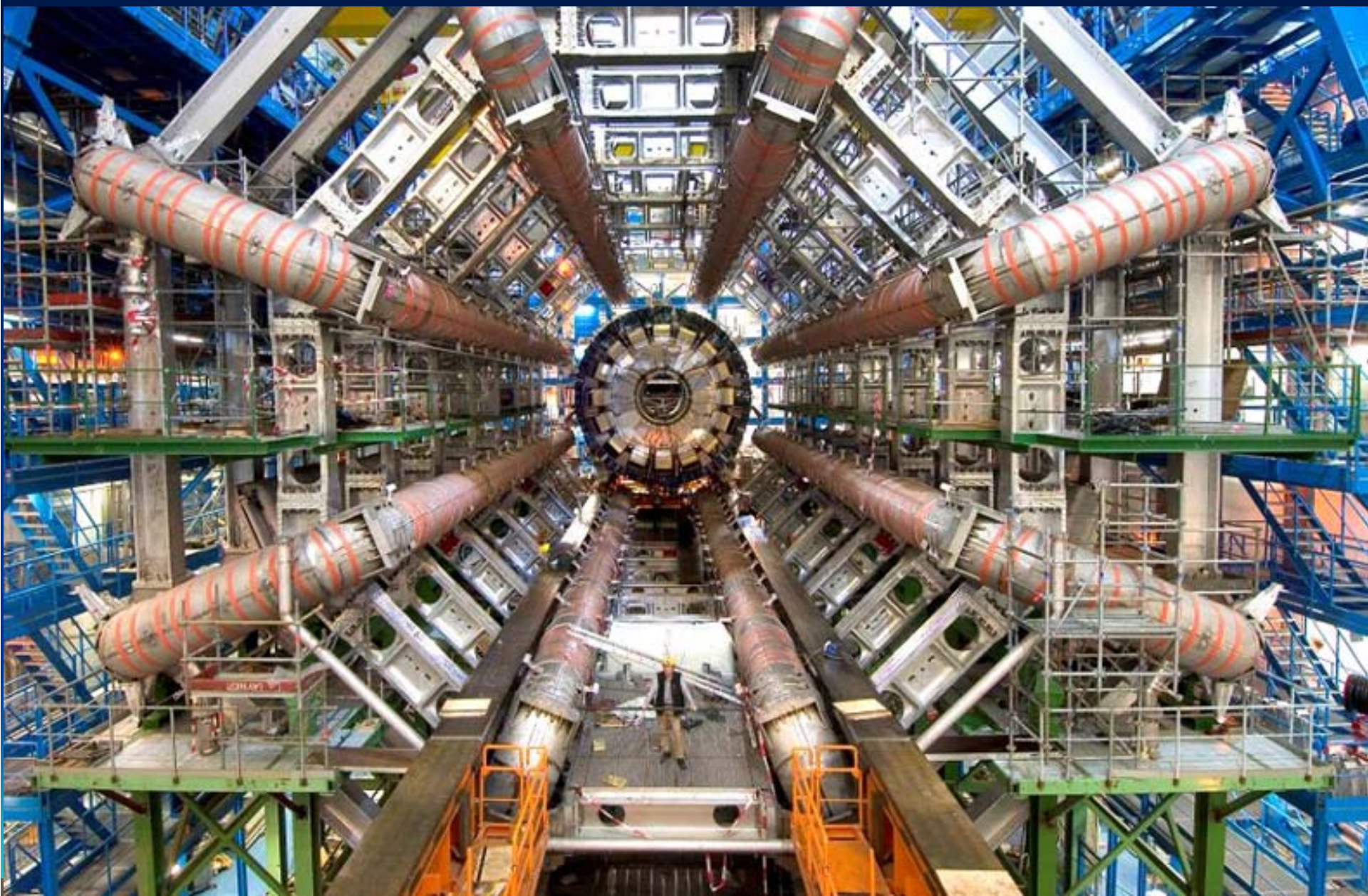
Global is “**inclusive.**”

Inter**national** is  
“**exclusive.**”

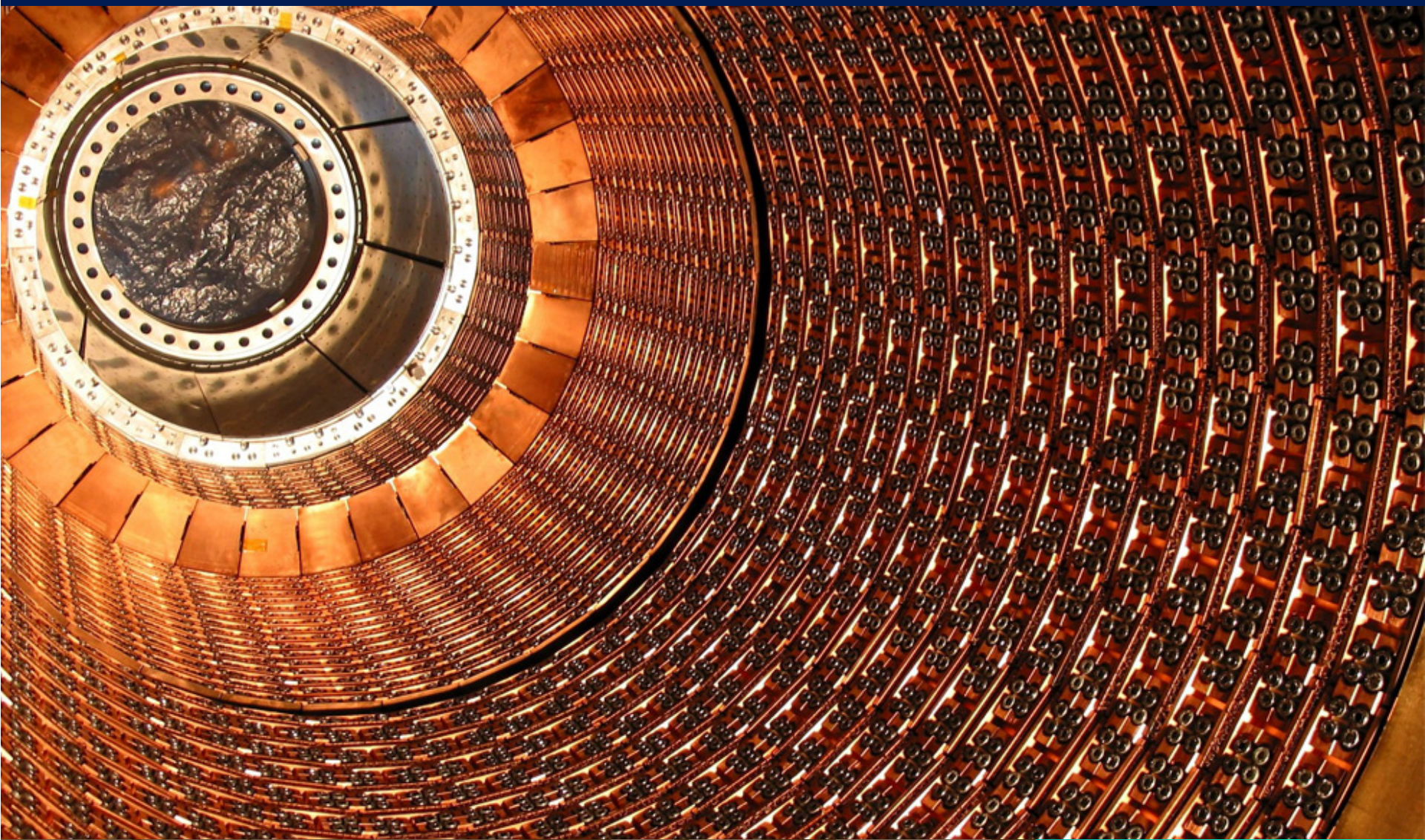


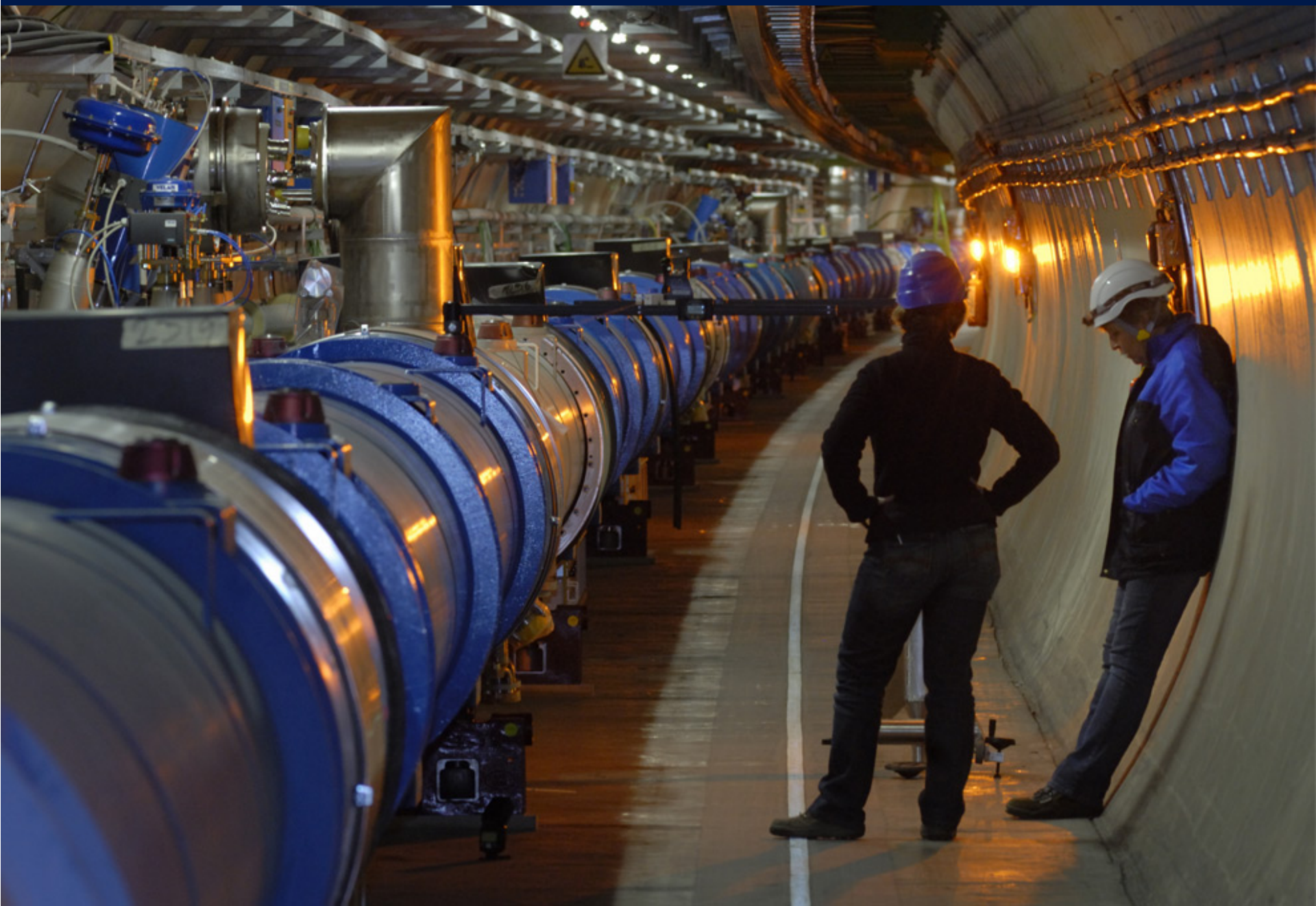
**Let me show you some slides now  
and they are not MODERN ART,  
although they could be because  
they are so stunning!**

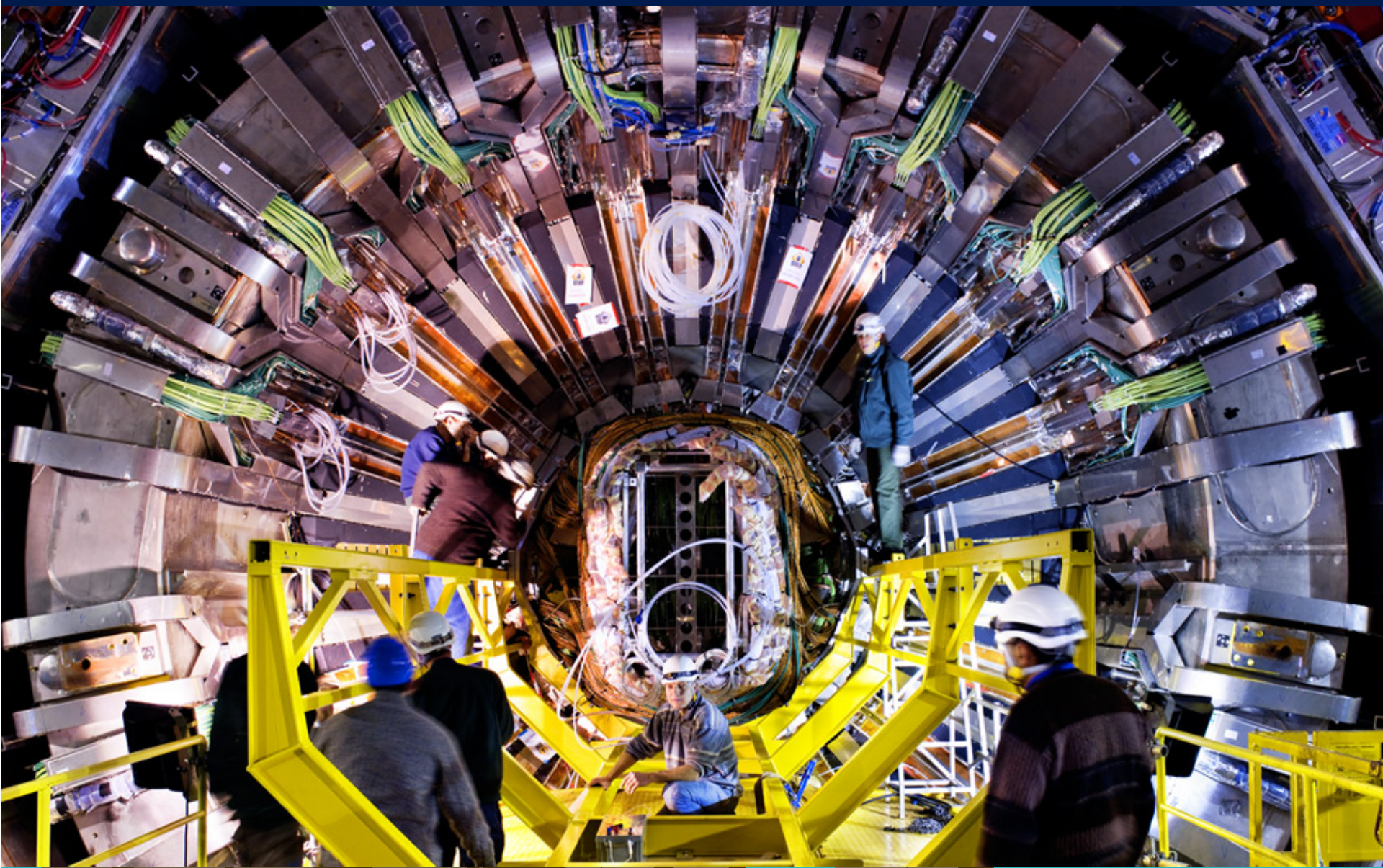






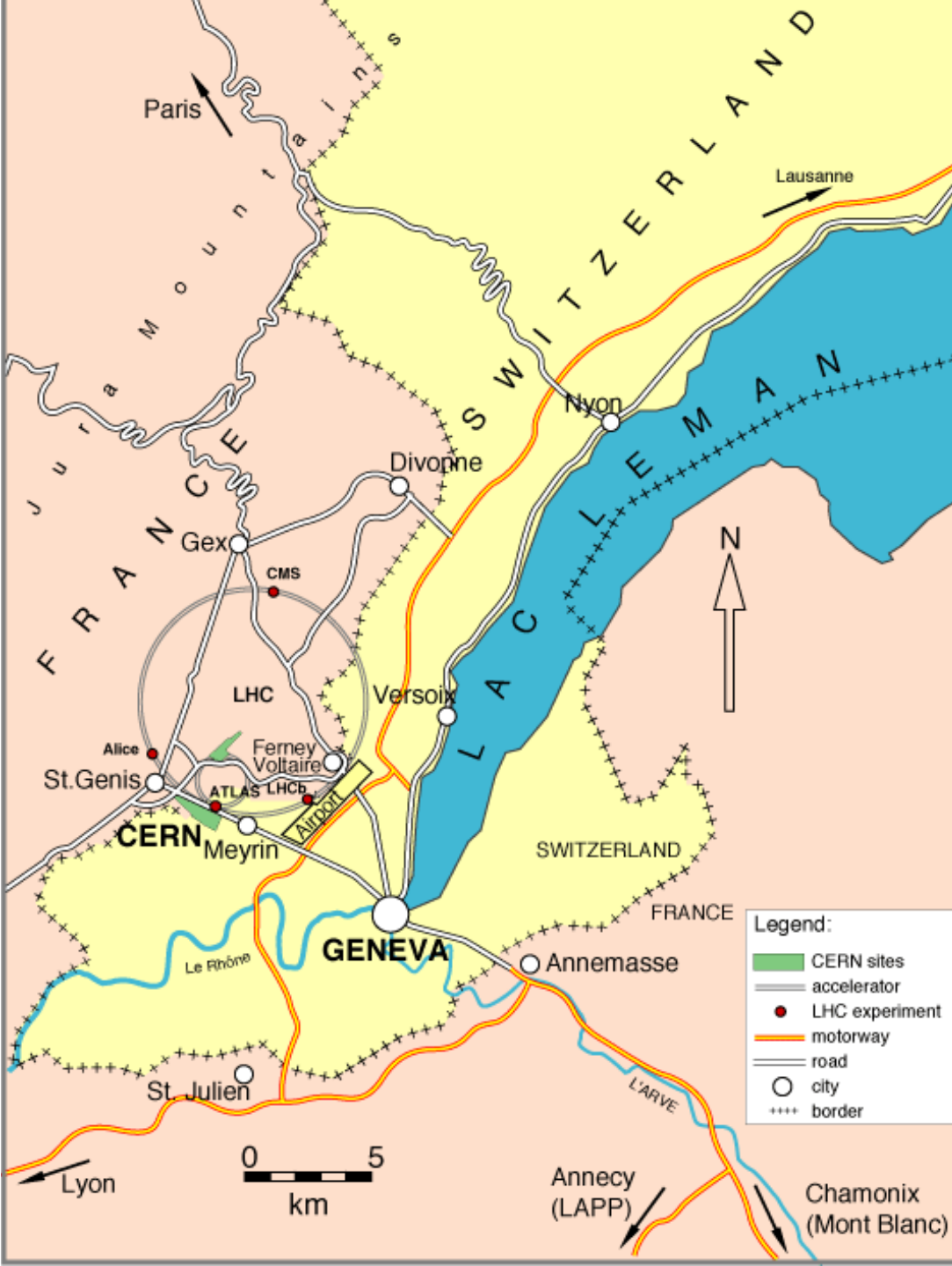






**Some of you may know  
already. They are pictures of  
the world's biggest subatomic  
particle accelerator called  
LHC, or Large Hadron  
Collider.**





**This facility is  
in the  
European  
Center for  
Nuclear  
Research, or  
CERN, and it  
sits in Genève,**



CERN



**CERN is not in London, Berlin, Paris  
or Rome because Switzerland is  
scientifically so superior. It is because  
Switzerland is a NEUTRAL GROUND  
for the BIG FOUR in Europe!**

**It is the best example of what REAL  
collaboration can achieve!**



# **So two challenges facing China and ASEAN**

**1. With the region growing economically, should it also contribute to human knowledge significantly in the 21<sup>st</sup> century?**

**2. Is the time right for the region consider developing something similar to CERN in the 21<sup>st</sup> century? Is there a Switzerland-like place in the region?**



**Can China and ASEAN  
de-fragmentize their  
scientific investigations in  
a major way in the 21<sup>st</sup>  
century?**



**Hence, facing such fast pace  
and transformational nature  
of Asia Pacific, how should  
higher education build its soft  
and hardware infrastructure  
in this new century?**



**We face at least  
four challenges**



**Education Integrity**

**Intellectual Agility**

**Academic Courage**

**Establish Asian Youth with Inherent  
Confidence in the 21<sup>st</sup> century**





**Integrity to  
education is  
like water to  
fish**



# Intellectual agility



*“..Bill Boeing. He hired (1916) Tsu Wong (王助) as the company's first aeronautical engineer to replace Boeing's original business partner, Conrad Westerveldt. An engineering graduate from the Massachusetts Institute of Technology, Tsu Wong became the first chief engineer at Boeing...”*

*Phil Condit, Boeing CEO, NAE Speech in 1997*



# Life of Wong

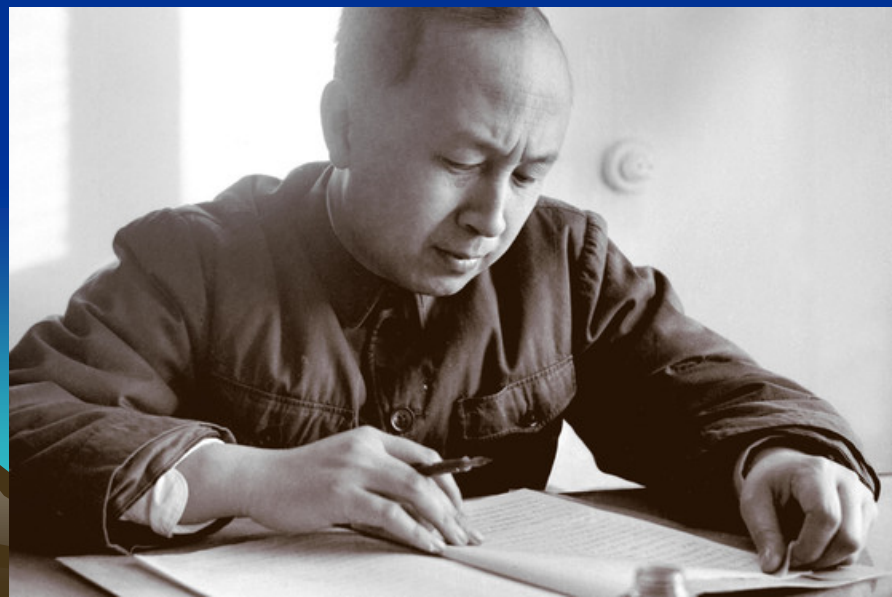
**1909** Qing Dynasty sent him to study in UK

**1915** Graduated from Durham University in Mechanical Engineering. Same year, entered MIT's aeronautical engineering program.

**1916** Received MSc from MIT and immediately invited by Bill Boeing to Seattle as his new company's first chief engineering. He redesigned the first plane to launch the company.

**1917** He returned to China.





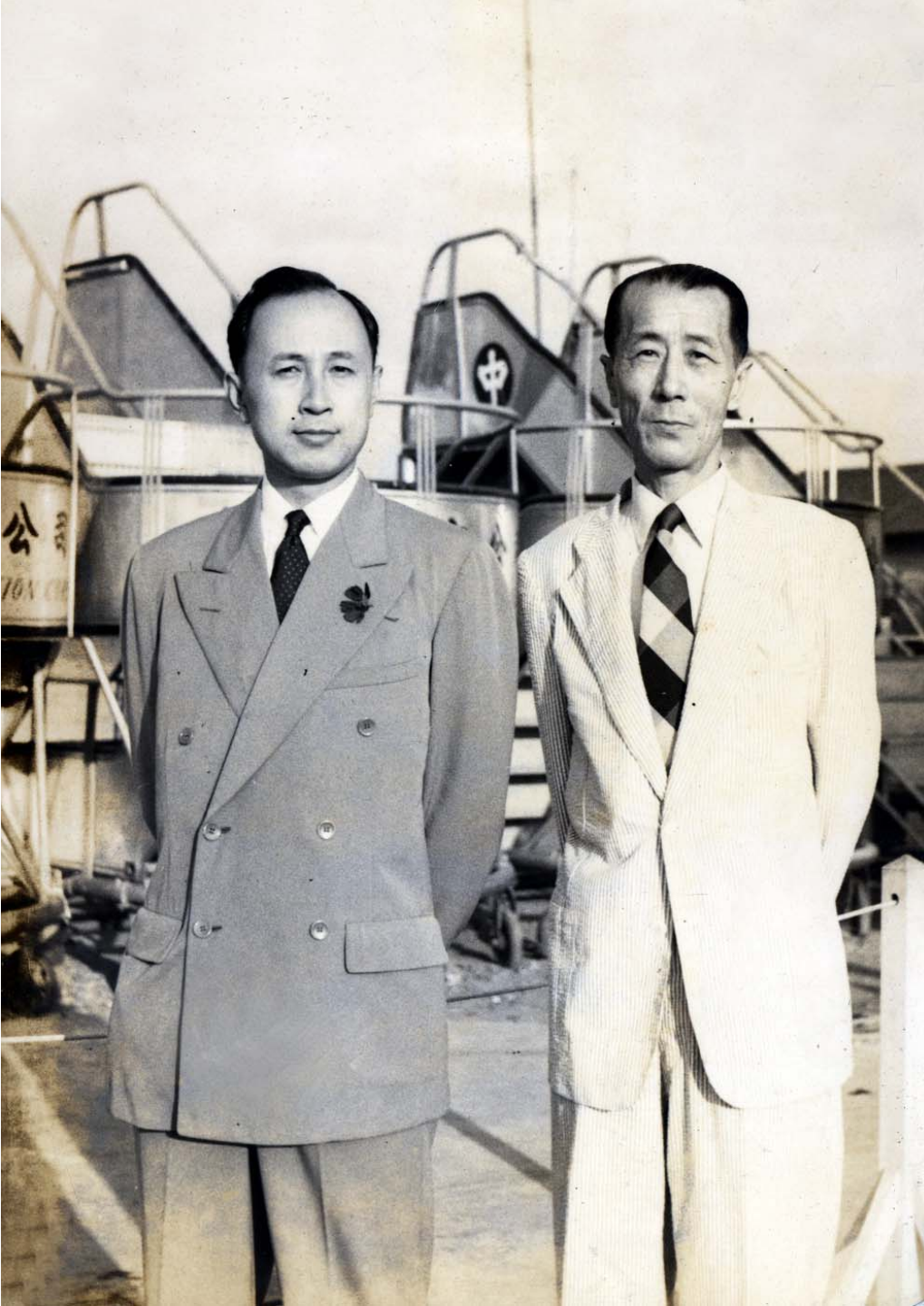
# SEA-TAC Airport



1947

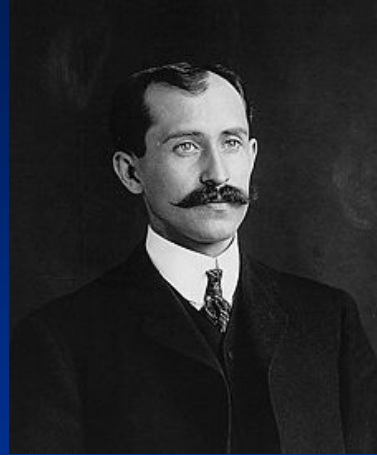
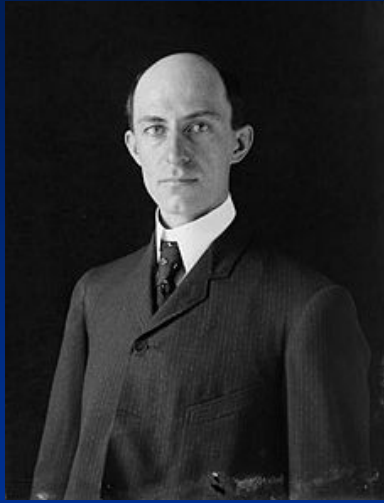
**Wong  
Tsoo,"father of  
Boeing"**

**Qian Xue-sheng  
"father of China  
rocket program"**



**Why did MIT in 1916  
had a complete course in  
aeronautical  
engineering?**





**Wilbur Wright    Orville Wright**  
**In 1903, Wright brothers**  
**showed that man can fly with**  
**machines.**

**In a short 13 years, even not  
knowing whether aeronautical  
industry could become a real  
business, built a complete program.  
That is Academic Agility.**

**Education leadership in Asia  
today needs to have academic  
agility.**

A stylized silhouette of a mountain range in shades of brown and grey, positioned at the bottom of the slide against a blue gradient background.

# Academic courage



**When Wong completed his undergraduate study in mechanical engineering, why did he not continue this field which was already a mature discipline in the early part of the 20<sup>th</sup> century?**



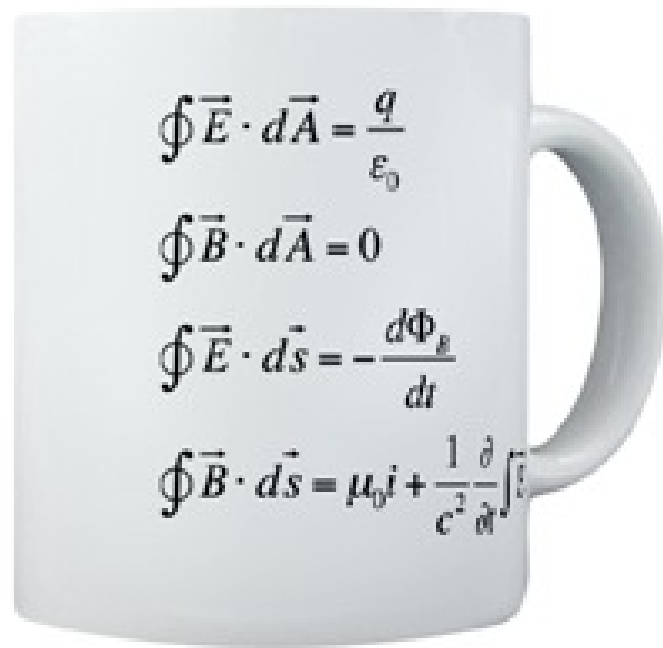
It is well documented  
that before **Renaissance**,  
China led the world in  
technologies!



**By the time 19<sup>th</sup> century came  
around, Europe standing on  
the solid underpinning erected  
from Renaissance, became the  
global epic center of  
intellectual achievements!**



# Maxwell Equations



# Chopin Nocturne

*A Mademoiselle J.W. Shirling*  
Nocturne

Chopin  
op. 55 nr 1

Andante

Piano

*p*

*dim*

Sheet Music from 8notes.com © Copyright 2007 Red Balloon Technology Ltd

A young aspiring youth  
like Wong in the early  
part of 20<sup>th</sup> century, who  
saw China fallen so far  
behind, naturally  
developed intellectual  
courage !



**Asia Pacific  
universities have the  
responsibility to  
produce students to  
“armed” with  
intellectual courage.**



# Inherent Self- confidence



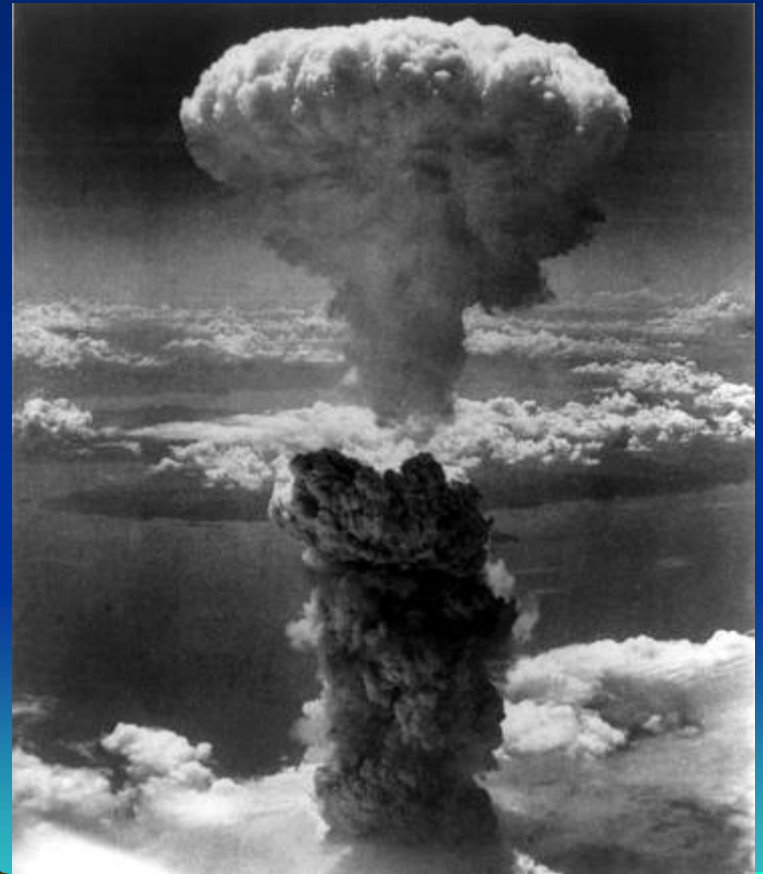
20<sup>th</sup> century saw the rise  
of North America's  
intellectual and economic  
prowess ◦



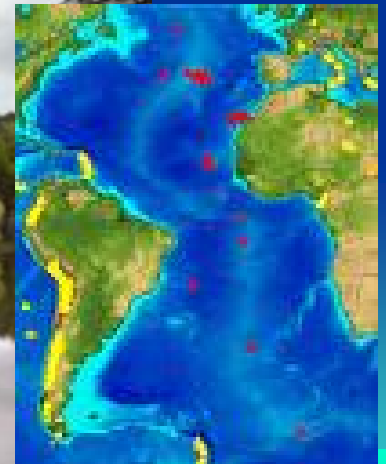
How did that happen?



# WWI and WWII



**While Europe and Asia were turned upside down by WWI and WWII, North America was like a castle protected by a moat!**



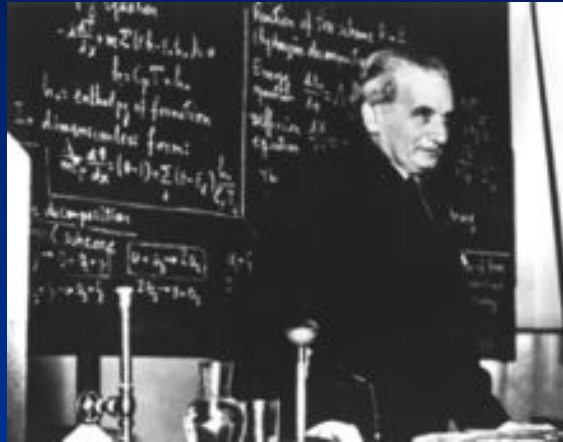
**As a result, North America enjoyed one of the greatest brain-drain from Europe in the first half of the 20<sup>th</sup> century.**



# Albert Einstein

1879-1955

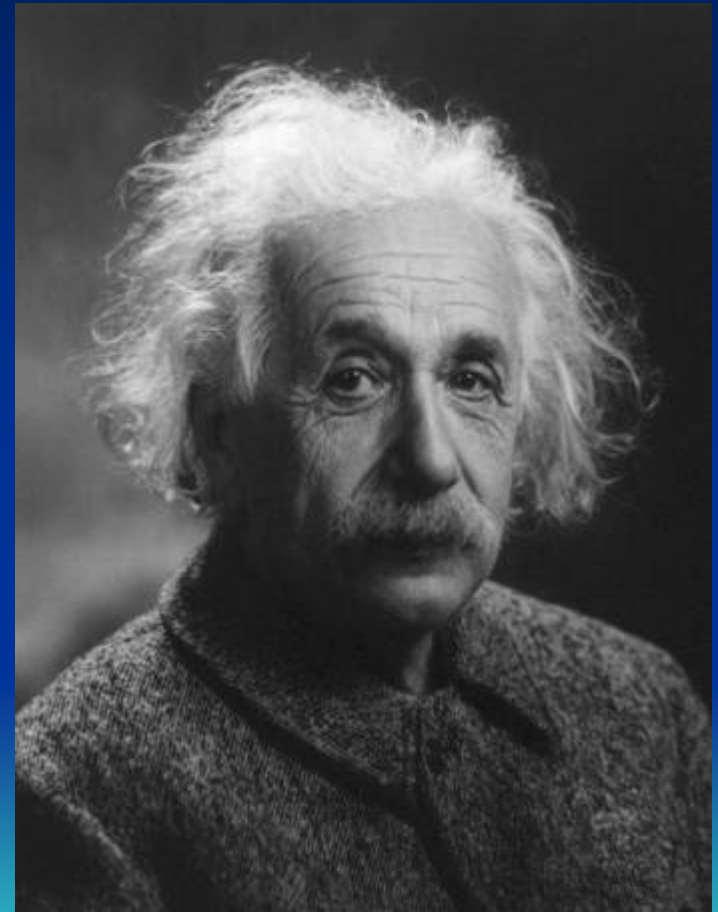
Theodore von Kármán  
1881 - 1963



John von Neumann  
1903-1957



Herman Weyl  
1885-1955





Jascha Heifetz  
1901-1981

Isaac Stern  
1920-2001



# Ludwig Mies van der Rohe (1886 – 1969)



After 1933, Nazi political pressure soon forced Mies to close the government-financed school. his style was rejected by the Nazis as not "German" in character. Frustrated and unhappy, he left his homeland reluctantly in 1937 and accepted an offer to head the department of architecture of the newly established Illinois Institute of Technology..

**Supreme excellence!**



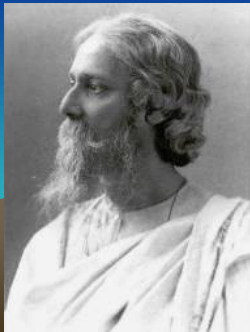
Coupling the supreme excellence  
from Europe with robust culture of  
the United States since 1766, North  
American young people were able to  
develop inherent self-confidence 内

涵信心!

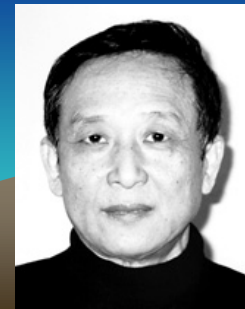


# Nobel prize in literature

- 1913文學獎  
*Rabindranath Tagore (1861-1941)*
- ... *expressed in his own English words, a part of the literature of the West*

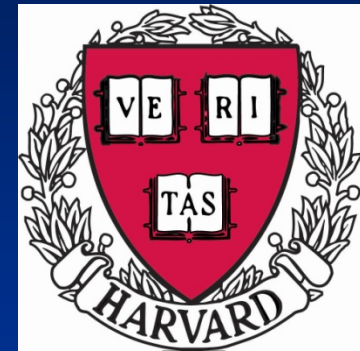


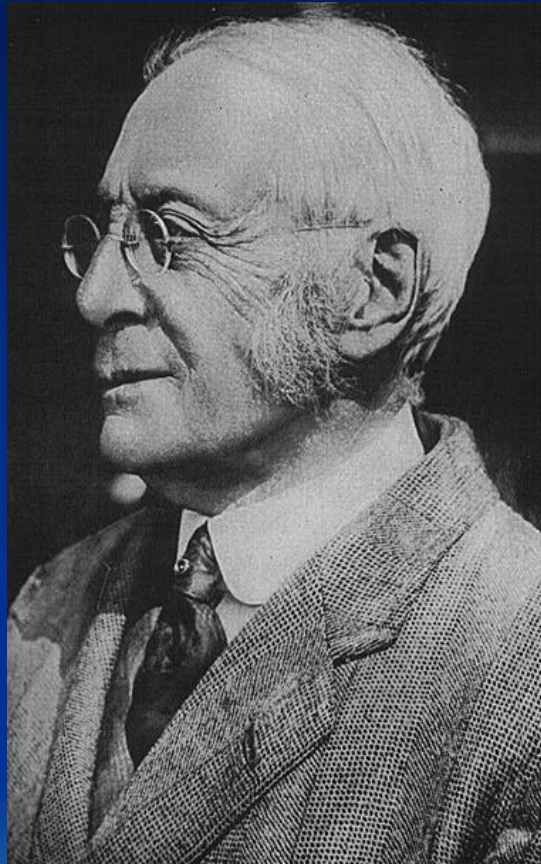
- 2000文學獎
- *Gao Xingjian (b. 1940)*  
高行建
- ... *has opened new paths for the Chinese novel and drama*



# Asia Pacific universities: why and how?





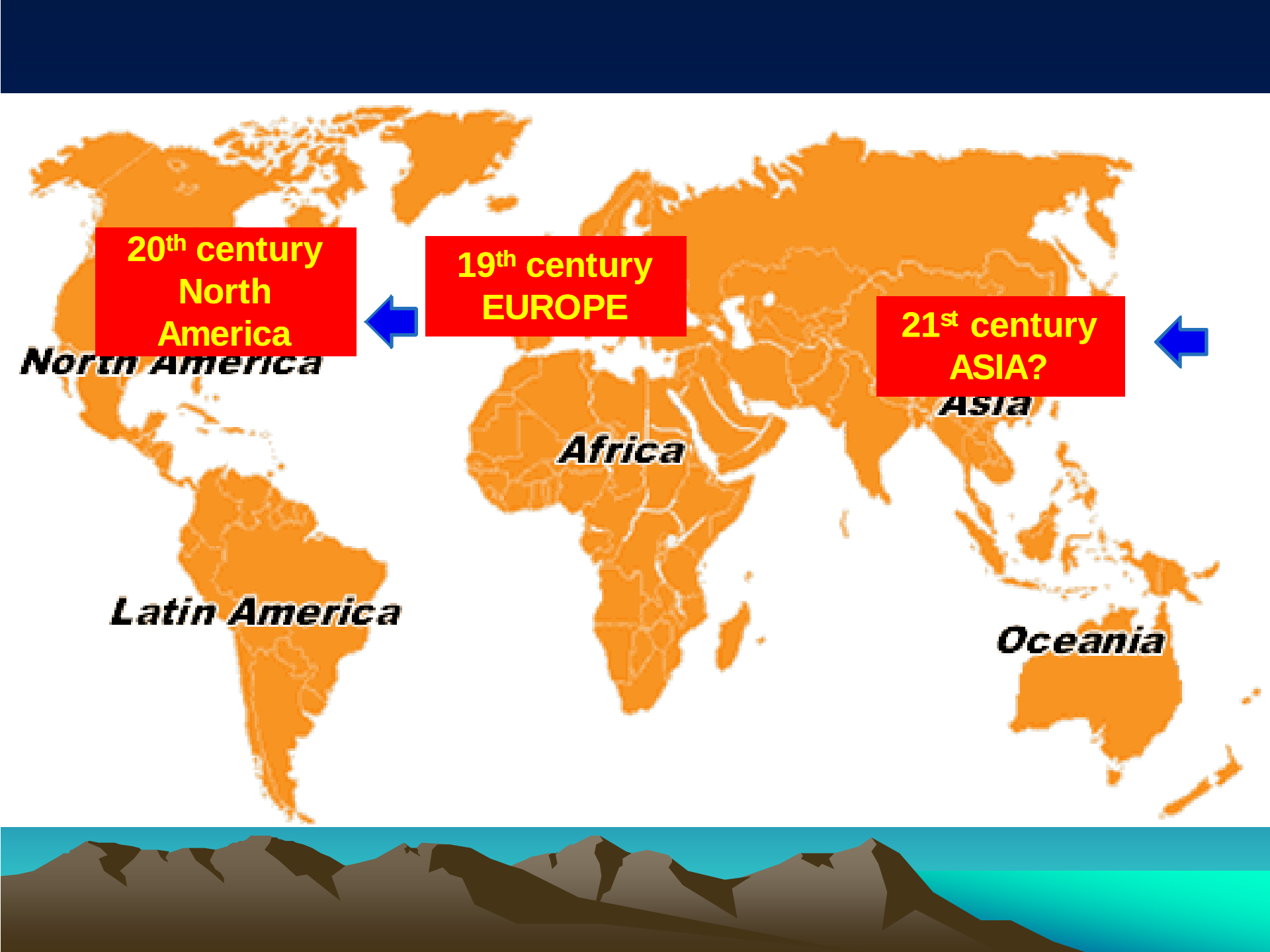


***"... a university, in any worthy sense of the term, must grow from seed. It cannot be transplanted from England or Germany in full leaf and bearing. ... When the American university appears, it will not be a copy of foreign institutions, or a hot-bed plant, but the slow and natural outgrowth of American social and political habits... The American college is an institution without a parallel; the American university will be equally original."***

**Charles Eliot, Harvard President  
1869-1909**

*"... a university, in any worthy sense of the term, must grow from seed. It cannot be transplanted from England or United States in full leaf and bearing. ... When the Asian Pacific university appears, it will not be a copy of foreign institutions, or a hot-bed plant, but the slow and natural outgrowth of Asian Pacific social and political habits... The Asian Pacific college is an institution without a parallel; the Asian Pacific university will be equally original."*





**20<sup>th</sup> century  
North  
America**

**19<sup>th</sup> century  
EUROPE**

**21<sup>st</sup> century  
ASIA?**

***North America***

***Africa***

***Asia***

***Latin America***

***Oceania***



亞洲發展銀行

**Closing comment at Conference on  
Global Financial Crisis: Industrial  
Restructuring**



*Throughout the 20th century, Asia was psychologically “coupled” to the West, and understandably so. With superior economic and intellectual strengths, it is quite natural that Asia viewed the West as the ‘standard of excellence.’ However, after such a period as this with the West so palpably exposing its social & economic weaknesses, this may be the first time in the modern global economy that Asia can psychologically “**DECOUPLE**” from the West.*

*This is not to suggest that Asia should decouple economically and intellectually from the West; rather, I am talking about a “psychological decoupling” to undo a sense of reliance on the West, without which it is unlikely that Asia will develop a deep sense of inherent self-confidence and without which the 21st century is surely not to be the*  
***“Asian Century.”***



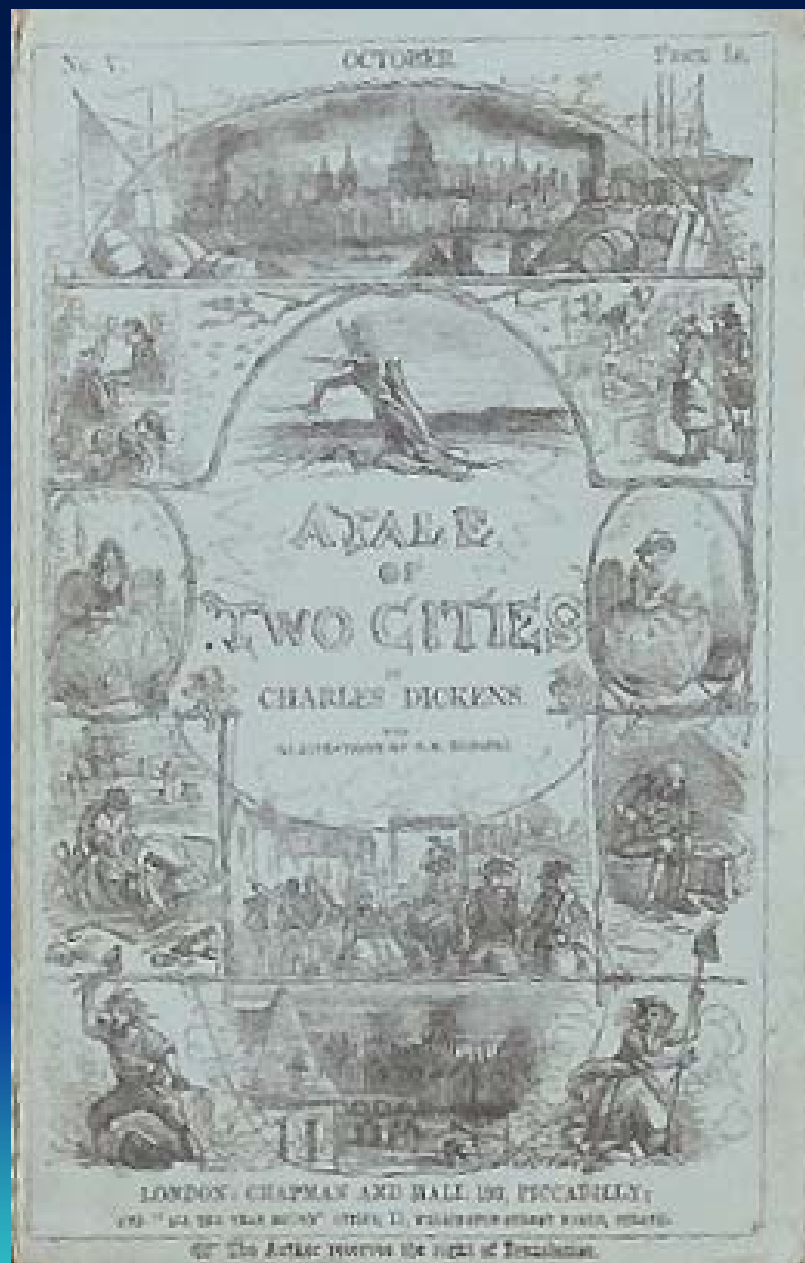
從心理上與西方脫鉤!

Psychological decoupling!





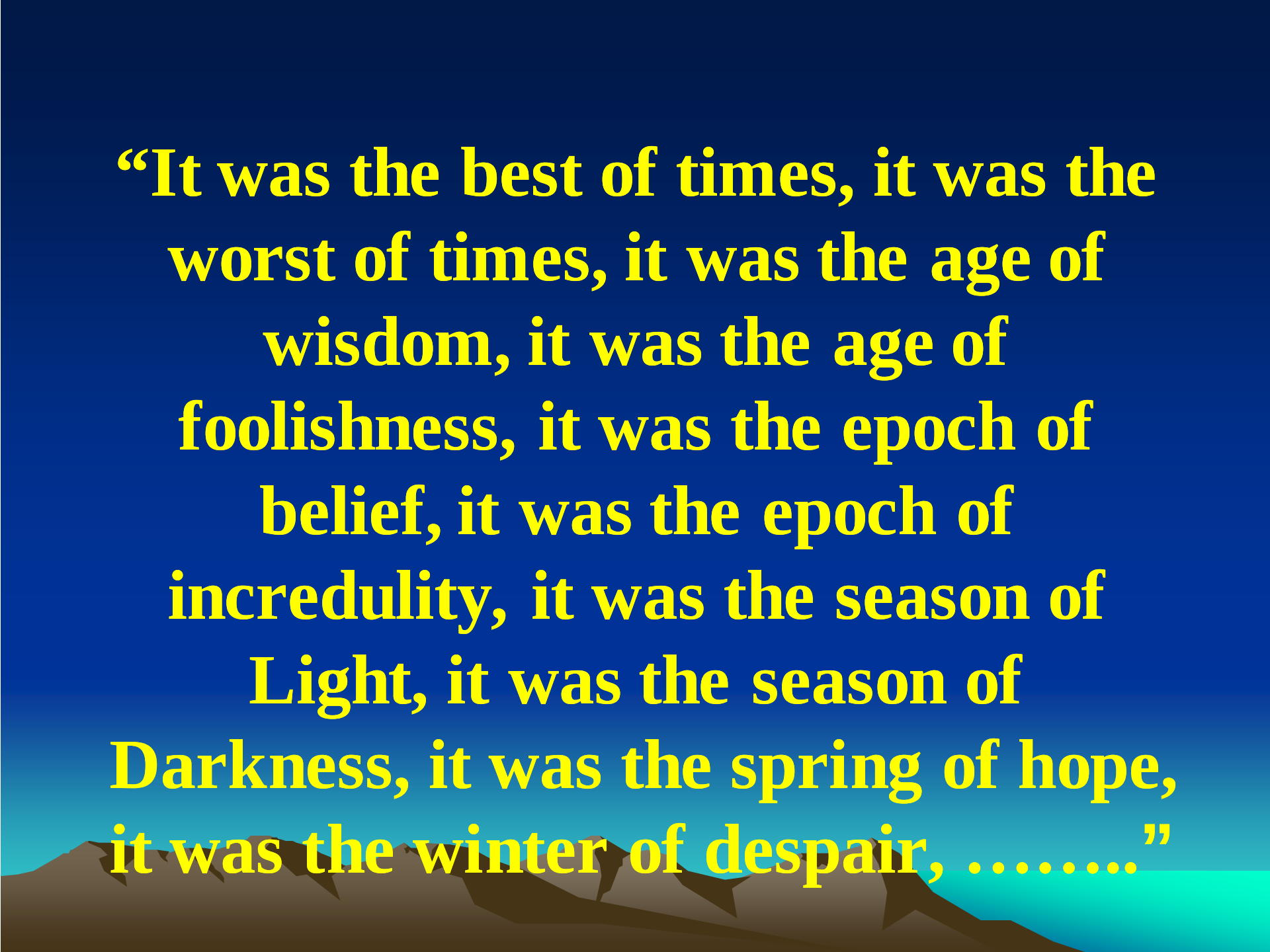
狄根斯  
1812 - 1870



# A tale of two cities 1859



**“It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of Light, it was the season of Darkness, it was the spring of hope, it was the winter of despair, .....”**



**It is truly breathtaking that more than 150 years ago, Mr. Dickens was able to portray our situation in Asia Pacific today in such vivid terms!**



**Thank you for  
your attention.**

