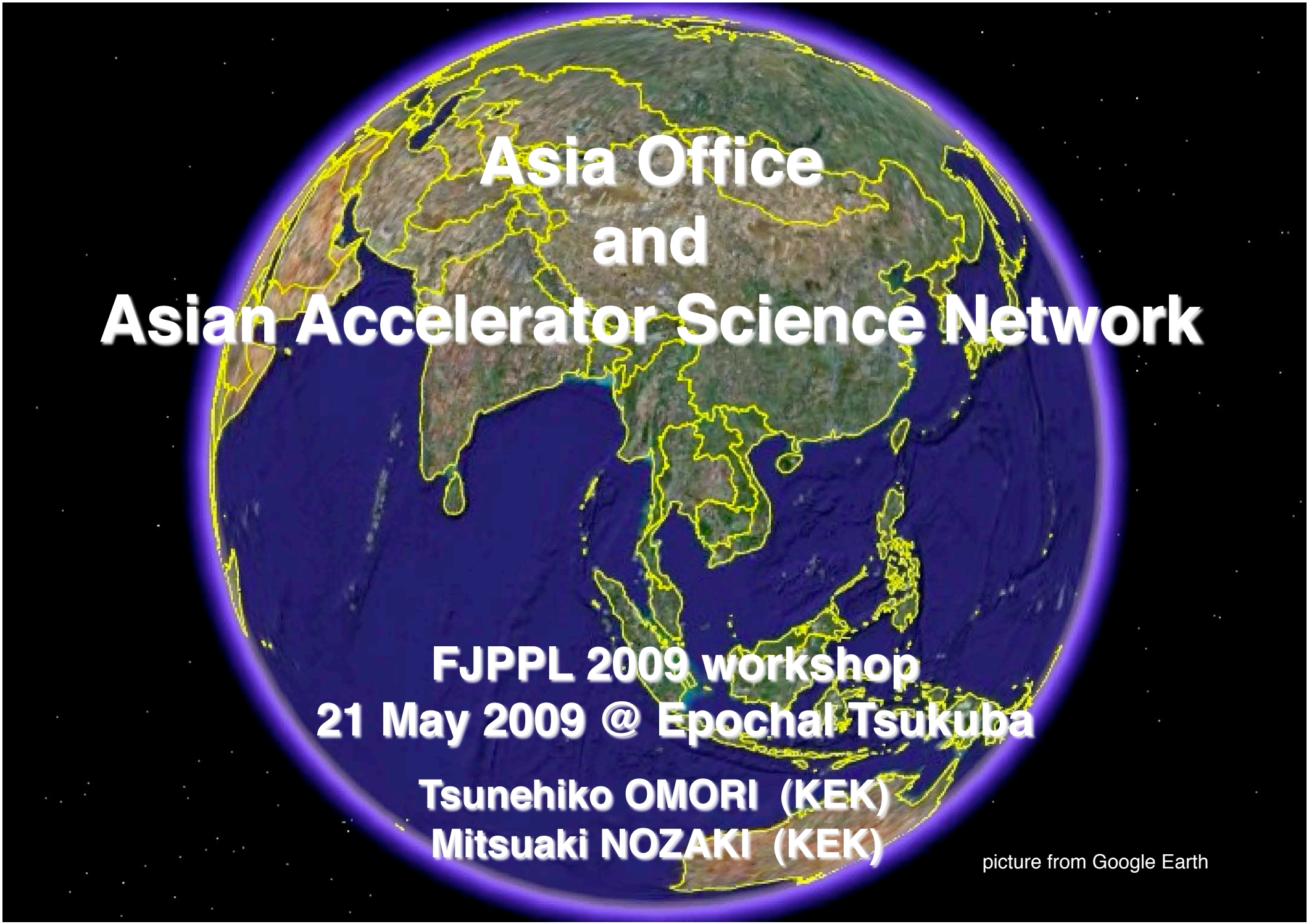


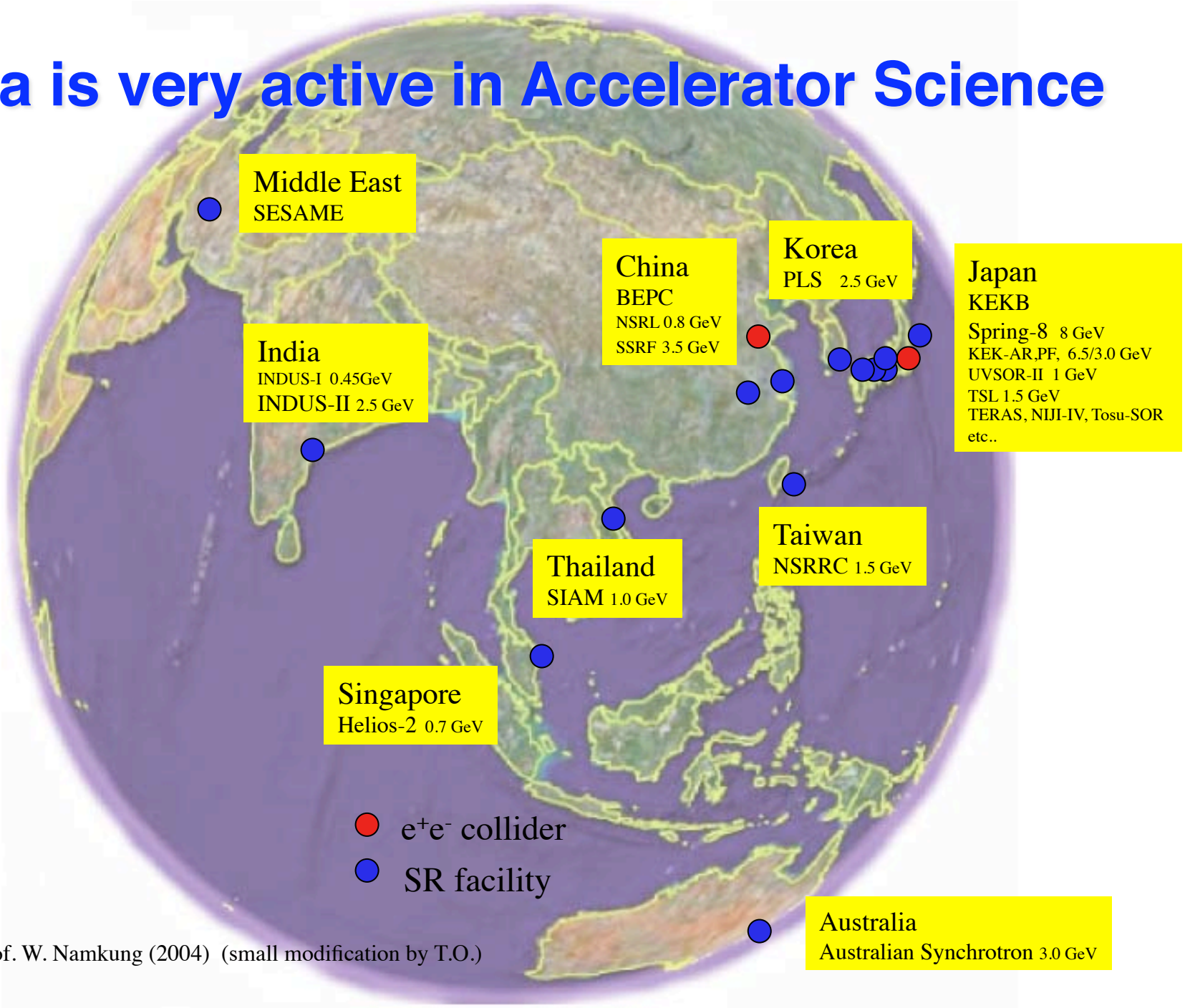
Asia Office and Asian Accelerator Science Network

FJPPL 2009 workshop
21 May 2009 @ Epochal Tsukuba

Tsunehiko OMORI (KEK)
Mitsuaki NOZAKI (KEK)

picture from Google Earth

Asia is very active in Accelerator Science



Prof. W. Namkung (2004) (small modification by T.O.)

Asia has Good Basis of Collaborations

ACFA established in 1995

ACFA Activities

- Plenary ACFA Meetings
- ACFA Statements
- Working Groups
- Asian Particle Accelerator Conferences
- Asian Accelerator Schools

ACFA Activities

ACFA Working Groups
- Network (Y. Karita)
- Electronic Publication (Y. H. Chin)
- Study Group for Physics/Detector at LC (A. Miyamoto)
- High-Power Proton Accelerator (Byung-Ho Choi)
- Advanced Accelerator (K. Nakajima)
- Asian Linear Collider Steering Committee (W. Namgung -> S. Kurokawa)

ACFA Statements
- ACFA Documents (1996)
- 1st Statement on the Beijing Tau-Charm Factory (1996)
- 2nd Statement on National Synchrotron Research Center in Thailand (1996)
- 3rd Statement on the e+e- Linear Collider (1997)
- 4th Statement on the BELLE Collaboration at KEKB Collider (1999)
- 5th Statement on the e+e- Linear Collider (2001)
- 6th Statement on the Linac Undulator Light Installation in Singapore (2002)
- 7th Statement on the International Linear Collider (2004)
- 8th Statements on the Tiwan Photon Source (2006)

Many Collaborations

Many collaborations.

Independent.

Not so visible from general public.

Next Step

More frequent and efficient exchange of information and people in Asia

Form a Community with guidance of ACFA

Make Ourself Visible from Outside of the Community

Asian Accelerator Science Network

What is the Network for ?

- to establish the Asian accelerator science community
- to promote exchange of accelerator scientists/students
- to coordinate cooperative research programs
- to coordinate strategic planning based on common interests
- to plan/support symposia, workshops, and schools in Asia

- the Network is not limited to HEP programs, but extends to accelerator science in general
  - science using light sources or neutron sources
  - medical/industrial application
  - innovative technologies (accelerator/detector)

New Web site of the Community

- A web site is important as a gateway to the accelerator science
  - Multi Language (Chinese, English, Japanese, Korean,,,,)
  - A “communication plaza” introducing activities/people in different fields and different countries/regions
  - Weekly Issues for General Public (Outreach)
  - Mail magazine linked to the Web site
- To create and maintain the web site
  - At least one "communicator" in each country/region
    - "communicator" = science communicator
    - to look for a story and make an article
    - to translate articles from different countries/regions
  - Web site manager for technical support (KEK Asia Office)
- Periodical leaflet in different languages (in future)

Weekly News from Asian Labs.

News in multi language: 简体中文 繁體中文 English 日本語 한국어

One news from somewhere in Asia in every week
- Assume N labs join the program
- Every lab provides a news every N-th week.

A communicator(s) in a Laboratory.

How to proceed? An example

Week(i)
- KNU provides a news in Korean(한국어) and English.
  - ---> sends it to KEK, IHEP, NTW.
- IHEP makes Chinese translation(简体中文)
- NTU makes Chinese translation(繁體中文)
- KEK makes Japanese translation(日本語)

Week(i+1)
- IHEP provides a news in Chinese(简体中文) and English.
  - ---> sends it to KNU, KEK, NTW.
- KNU makes Korean translation(한국어).
- NTU makes Chinese translation(繁體中文).
- KEK makes Japanese translation(日本語).

Asian Accelerator Plaza

简体中文 | 繁體中文 | English | 日本語 | 한국어

News

亚洲加速器科学界的新交流网站开通

新網站啟用：為了亞洲加速器科學社群的資訊交流。

New Web-site is open for communications in Asian accelerator science community

アジアの加速器化学のコミュニケーションの為の新しいホームページができました。

아시아가속기과학의 커뮤니케이션을 위한 홈페이지가 개설되었습니다.

Asian Accelerator Plaza English

News

2009.03.01
"Asian Accelerator Plaza" opens! —Asian Accelerator Plaza (AAP) is a homepage for Asian accelerator communication!

2009.03.01
Korea to build new science and business city

Korea to build new science and business city

Since the leadership of its President Lee Myung-bak, Korea has placed high value on science and technology. On 13 January, the government officially signed a contract for a big project to build an international science and business belt that includes the establishment of a new institute, the Asian Basic Science Institute (ABSI), and the construction of a Rare Isotope Accelerator (RIA).

This project is a part of the Presidential Council on

Asian Accelerator Plaza 日本語

News

2009.03.01
アジアの加速器コミュニケーションのためのホームページ「アジア加速器プラザ」オープン！

2009.03.01
韓国、新たな科学ビジネス都市建設を決定

韓国、新たな科学ビジネス都市建設を決定

韓国では、李明博大統領政権のもと、科学技術の重視政策が進められてきましたが、1月13日、韓国政府は、アジア基礎科学研究機構（ABSI）設立、希少同位体加速器（RIA）建設をはじめとする、国際的な科学ビジネス地帯の大型建設プロジェクトにゴーサインを出しました。

このプロジェクトは大統領直属の諮問会議が発表した「将来と展望」事業の一つで、国家科学技術委員会の場で李大統領に提出されたもの。「展望」は、政府が韓国の発展促進のために重点項目として、緑化技術、ハイテク集約、付加価値通信網の三つの産業分野を提示しています。韓国政府は

Team Asian Accelerator Plaza English

简体中文 繁體中文 日本語 한국어

Top News ACFA Word

Asian Accelerator Catalog

Australia
China
India
Japan
Jordan
Korea
Thailand
Taiwan
Singapore

Australia
- Australian Synchrotron

China
- Beijing Electron Positron Collider
- Shanghai Synchrotron Radiation Facility

India
- INDUS-1／INDUS-2
- Inter-University Accelerator Centre
- Variable Energy Cyclotron Centre

Japan
- KEKB
- ATF
- J-PARK
- Spring-8

Jordan
- Synchrotron-light for Experimental Science and Applications in the Middle East

Korea
- Pohang Light Source

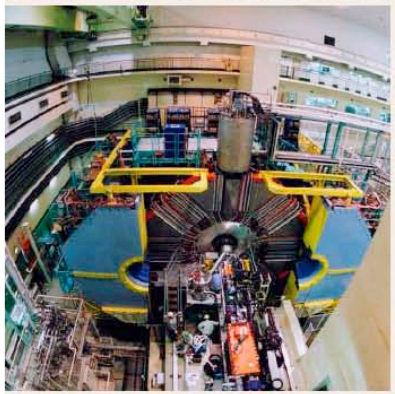
Thailand
- Siam Photon Source

Taiwan
- Taiwan Light Source

Singapore
- Singapore Synchrotron Light Source

Australia | Japan | Thailand
China | Jordan | Taiwan
India | Korea | Singapore

Japan



01

Name : KEKB
Site : High Energy Accelerator Research Organization (KEK)
Tsukuba / Japan
Startup year : 1998
Type : Electron-positron collider
Energy : Electron 3.5GeV, Positron 8.0GeV

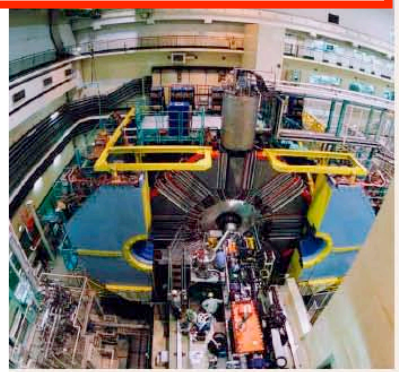
KEKB accelerator produces billions of particles B mesons and anti B mesons by colliding electron and positron. The main purpose of KEKB accelerator is to explore the cause of CP violation (symmetry of a particle and antiparticle) by observing the collision. B mesons decay is observed by Belle detector located around interaction point of electron and positron. KEKB and PEPII accelerator which had a similar function experiment confirmed CP violation in K mesons and B mesons could explain in six quark models of Kobayashi-Maskawa. Kobayashi and Maskawa shared 2008 Nobel Prize for Physics with Nambu. The reconstruction of KEKB accelerator for improving performance will be explored a law of new physics in the future.

Team Asian Accelerator Plaza English

Australia | Japan | Thailand
China | Jordan | Taiwan
India | Korea | Singapore

Japan

Short description for general public and journalists



⌀1

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Australia | Japan | Thailand
China | Jordan | Taiwan
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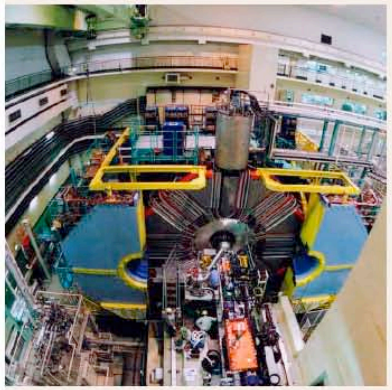
Japan



01

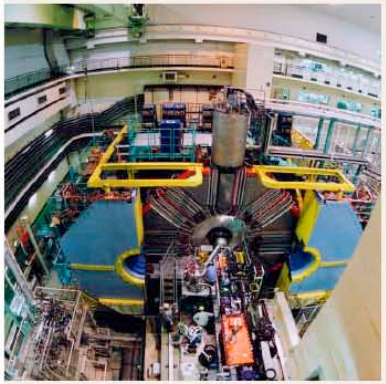
名称：KEKB
場所：KEK 高エネルギー加速器研究機構
　　つくば市／日本
運転開始年：1998
タイプ：電子・陽電子衝突型加速器
エネルギー：電子 3.5 GeV、陽電子 8.0 GeV

KEKB 加速器は電子と陽電子を衝突させる事により、B中間子と反B 中間子を大量に生成する。その崩壊を観測する事で CP 対称性（粒子と反粒子の対称性）の破れの原因を探る事が KEKB 加速器の主な目的である。B中間子の崩壊は、電子と陽電子の衝突点を囲む Belle 測定器によって観測される。

KEKBおよび同様の機能を持つ米国の PEP Ⅱ 加速器での実験より、K およびB中間子系でのCP 対称性の破れは、小林・益川の6クォークモデルで説明できる事が確認された。なお小林と益川は、南部と共に2008年のノーベル物理学賞を受賞した。今後は、新しい物理の法則を探る為に、さらに性能を上げる為の改造が計画されている。

Australia | Japan | Thailand
China | Jordan | Taiwan
India | Korea | Singapore

Japan



01

명칭 : KEKB
장소 : KEK고에네르기 가속기 연구기구
일본 츠쿠바시
운전개시년 : 1998
타입 : 전자・양전자충돌형가속기
에네르기 : 전자3.5 GeV, 양전자8.0 GeV

KEKB가속기는 전자와 양전자를 충돌시킴으로, B중간자와 반(反)B중간자를 대량으로 생성한다. 그 붕괴를 관측함으로써CP대칭성(입자와 반입자의 대칭성)의 깨어짐의 원인을 탐구하는 일이 KEKB 가속기의 주된 목적이다. B중간자의 붕괴는, 전자와 양전자의 충돌점을 둘러싼 Belle 측정기에 의해 관측된다.

KEKB와 같은 기능을 가진 미국의PEPII가속기로의 실험에 의해, K 와 B 중간자계 에서의 CP대칭성의 깨어짐은, 코바야시（小林）・마스카와（益川）의 6쿼크모델로 설명될 수 있음이 확인되었다. 또한 코바야시（小林）・마스카와（益川）는 남부（南部)와 함께2008년의 노벨 물리학상을 수상하였다. 앞으로도 새로운 물리의 법칙을 찾기위하여, 더욱 성능을 높이기 위한 개조를 계획하고 있다.

Asian Accelerator Plaza English

Vocabulary

A collection of keywords to find the accelerator, is a multilingual dictionary handy.
All terms, English, Japanese, Korean, and Chinese are available in four languages.

Dictionary of Accelerator-based Science

List of terms

- ILC
- Dark Energy
- Dark Matter
- ERL: Energy Recovery Linac
- ITER
- Inflation Theory
- Accelerated expansion of the Universe

Asian Accelerator Plaza English

Vocabulary

ILC

Stands for International Linear Collider. The ILC is a proposed particle accelerator to collide ultra-high energy electrons and positorons. Physicists from around the world are currently working on the design development.

The ILC is the largest high-energy electron accelerator in history, colliding particles at the highest energy ever experimented. The 31-kilometer tunnel underground will be installed with the state-of-the-art precision systems, which accelerates electrons and positrons to the near speed of light. The head-on collisions in the central region will recreate the conditions just after the big bang. The questis to shed light on what happened at the beginning of the Universe.

简体中文 繁體中文 日本語 한국어

Return

Asian Accelerator Plaza English

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Short description for general public and journalists

简体中文 繁體中文 日本語 한국어

« Return

Asian Accelerator Plaza 日本語

Vocabulary

ILC（アイエルシー）

国際リニアコライダー（International Linear Collider）の略。超高エネルギーの電子・陽電子の衝突実験を行うための加速器。現在、国際協力によって設計開発が推進されている。

ILCは、史上最大最高の高エネルギー電子加速器。地下に埋められた全長約31kmに及ぶ直線トンネル内に構築する超精密システム。電子と陽電子のビームをほぼ光の速度にまで加速し、中央部で真っ正面から衝突させることにより、ビッグバンとほぼ同じ状態を生み出すことが可能。宇宙の創世期の謎解明を目指す。
関連サイト：

簡体中文 繁體中文 English 한국어

Return

Asian Accelerator Plaza 繁體中文

Vocabulary

ILC

國際直線對撞機（International Linear Collider）的簡稱。進行超高能量的電子-正電子的對撞實驗的加速器。目前正藉由國際合作推進設計開發。

ILC是史上最大最高級的高能電子加速器、一個建造在全長達到約31km的地下直線隧道內的超精密系統。藉由將電子與正電子的電子束加速到接近光速並使之在中央部分進行正面碰撞，可產生幾乎與宇宙大爆炸相同的狀態，以解開宇宙起源之謎為目標。相關網站：

简体中文 日本語 English 한국어

Return

Asian Accelerator Plaza 简体中文

Vocabulary

ILC

国际直线对撞机（International Linear Collider）的简称。进行超高能量的电子-正电子的对撞实验的加速器。目前正通过国际合作推进设计开发。

ILC是史上最大最高级的高能电子加速器、一个建造在全长达到约31km的地下直线隧道内的超精密系统。通过将电子与正电子的电子束加速到接近光速并使之在中央部分进行正面碰撞，可产生几乎与宇宙大爆炸相同的状态，以解开宇宙起源之谜为目标。相关网站：

繁體中文 日本語 English 한국어

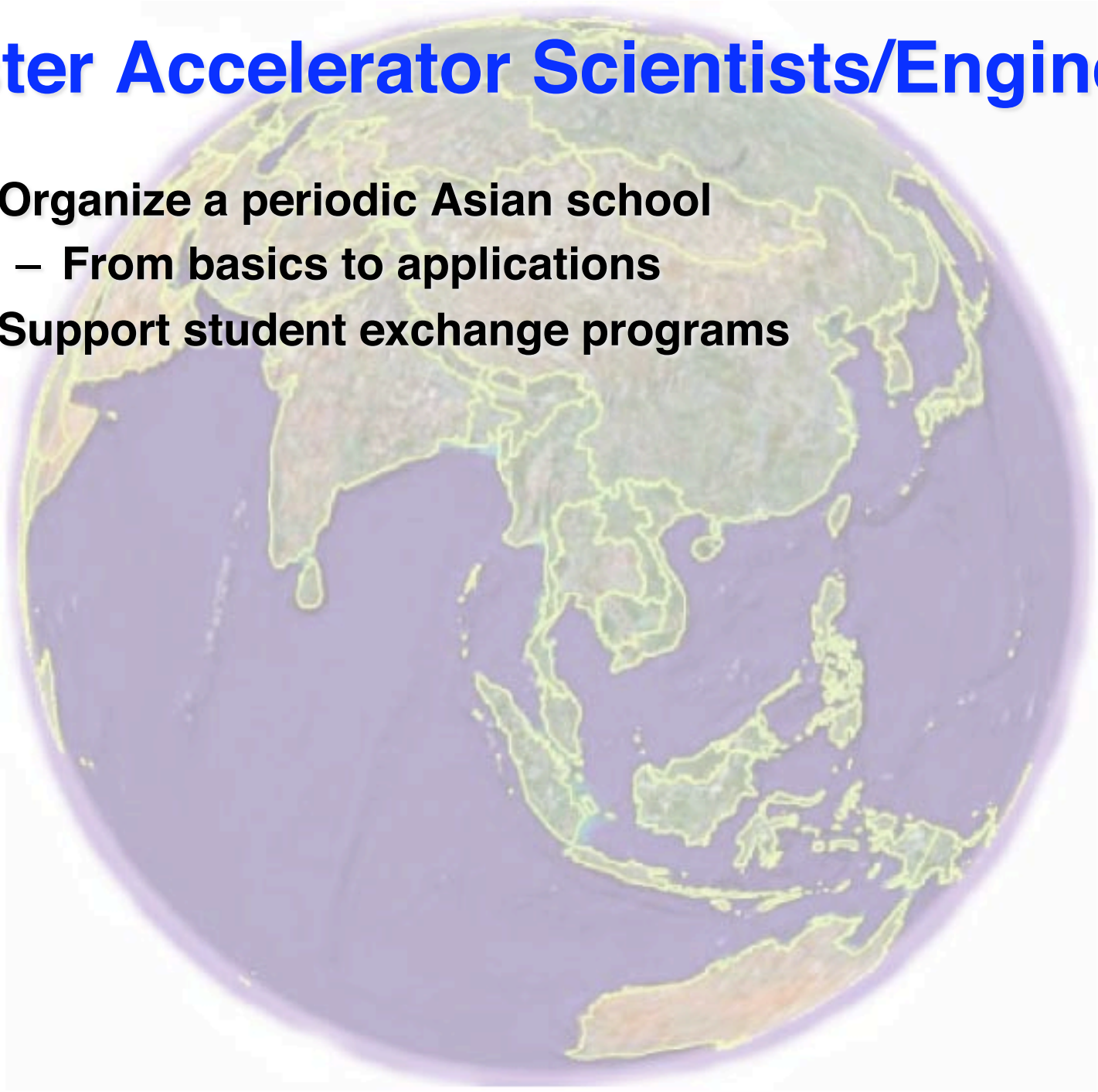
Return

Research Promotion

- Support cooperative research programs
  - HEP, light source, neutron source, medical / industrial application
  - New technologies (e.g. laser acceleration), detector, software
- Promote exchange of people
  - Provide a showcase for research opportunity
  - Financial and administrative support (if funded adequately)
- Organize symposia and workshops
  - Periodic conference

Foster Accelerator Scientists/Engineers

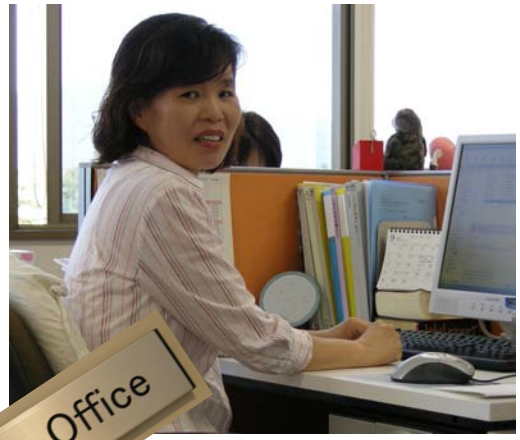
- Organize a periodic Asian school
  - From basics to applications
- Support student exchange programs

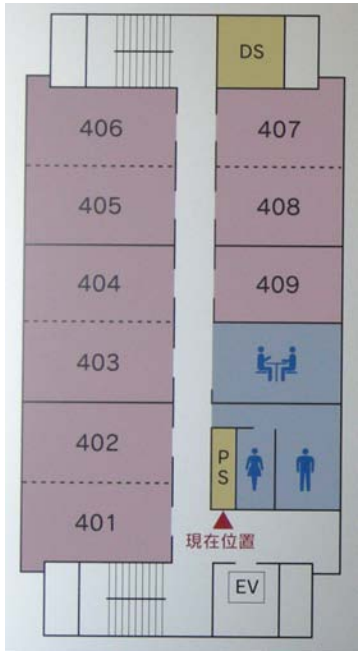


Running Network

- ACFA : Committee for high level decisions/recommendations
- Daily communication and operation
  - KEK provides an office :Asia Office
  - space and communication infrastructure (e.g. videoconference system)
  - Supporting staffs at Asia Office
  - Web sever and maintenance staff at Asia Office
  - Science communicators in laboratories/universities
- Asia office serves as the permanent secretariat of the ACFA

Asia Office visitor room (at KEK)





How to proceed

- Start from New Web site and Weekly News
  - relatively cheep
- Train ourselves for daily Asia-wide communication
- Then expand our activity step by step

Summary

1. Asia is very active in Accelerator Science
   - Many accelerators (in operation, under construction/planning)
   - Many research programs based on accelerators
2. Asia has Good Basis of Collaborations
   - ACFA since 1995
   - Many collaborations are on going.
3. Next Step
   - Frequent exchange of information and people,
   - Form a Community, Visible from Outside
4. Asian Accelerator Science Network
   - ACFA, Web site, Mail Magazine, Asia Office at KEK,,,,
5. New Web-site : Operated by many Asian Labs/Univ
6. We need Inputs from Many People