

Opening Address

Akira Ohnishi (YITP)

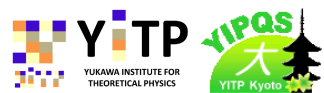
YIPQS Symposium

Perspectives in Theoretical Physics

--- From Quark-Hadron Sciences to Unification of Theoretical Physics ---

Feb.6-8, 2012

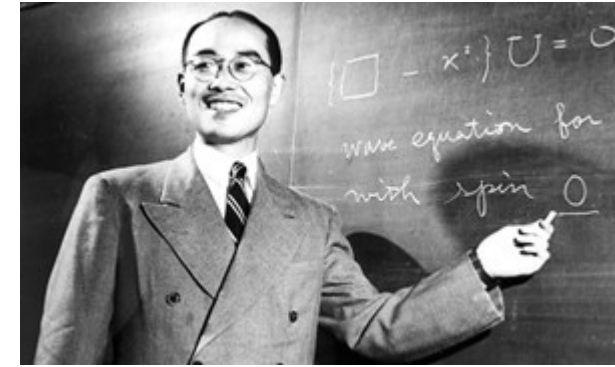
Yukawa Institute for Theoretical Physics, Kyoto, Japan



Yukawa Institute for Theoretical Physics

■ Research Institute for Fundamental Physics (RIFP, 1953–)

- First Director: Hideki Yukawa
- First Int. Conf. in Japan after WWII (Sep.'53)
- Annual International Symposium hosted by the institute (YKIS, 1978–)
- To provide a forum on frontiers & interdisciplinary subjects.



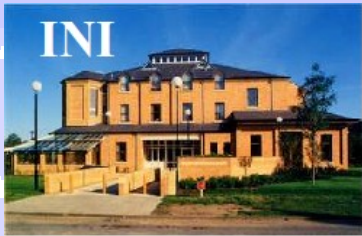
■ Yukawa Institute for Theoretical Physics (YITP, 1990–)

- Unification with Research Institute for Theoretical Physics in Hiroshima (1990)
- Nobel prize to Kobayashi-Maskawa (7th director) & Nambu (YIPQS IAC) (2008)



- Review committee's suggestion
'Proceed toward an international collaboration center'





MAX-PLANCK-GESELLSCHAFT



Kyoto



*Yukawa Institute for Theoretical Physics
Kyoto University*

***Yukawa Int. Program
for Quark-hadron Sciences***

Yukawa Int. Program for Quark-hadron Sciences

2006

proposal of YIPQS
(Kugo, Kunihiro, ...)

2007

*YIPQS is approved
(2007-2011, 5 year prog.)*

2008

Director: Eguchi

2009

*12 int. long-term WSs
21 int. molecule-type WSs*

2010

2011

2012

Long-term WS

1-3 month-long

10-20 researchers constantly stay

2013

Molecule-type WS

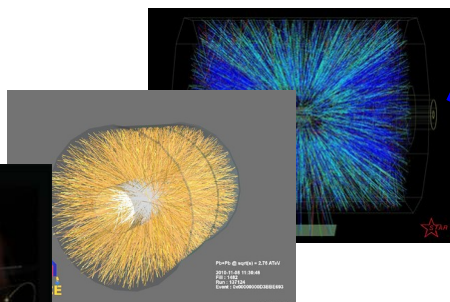
2 weeks or more

2014

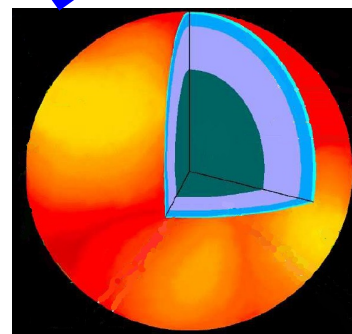
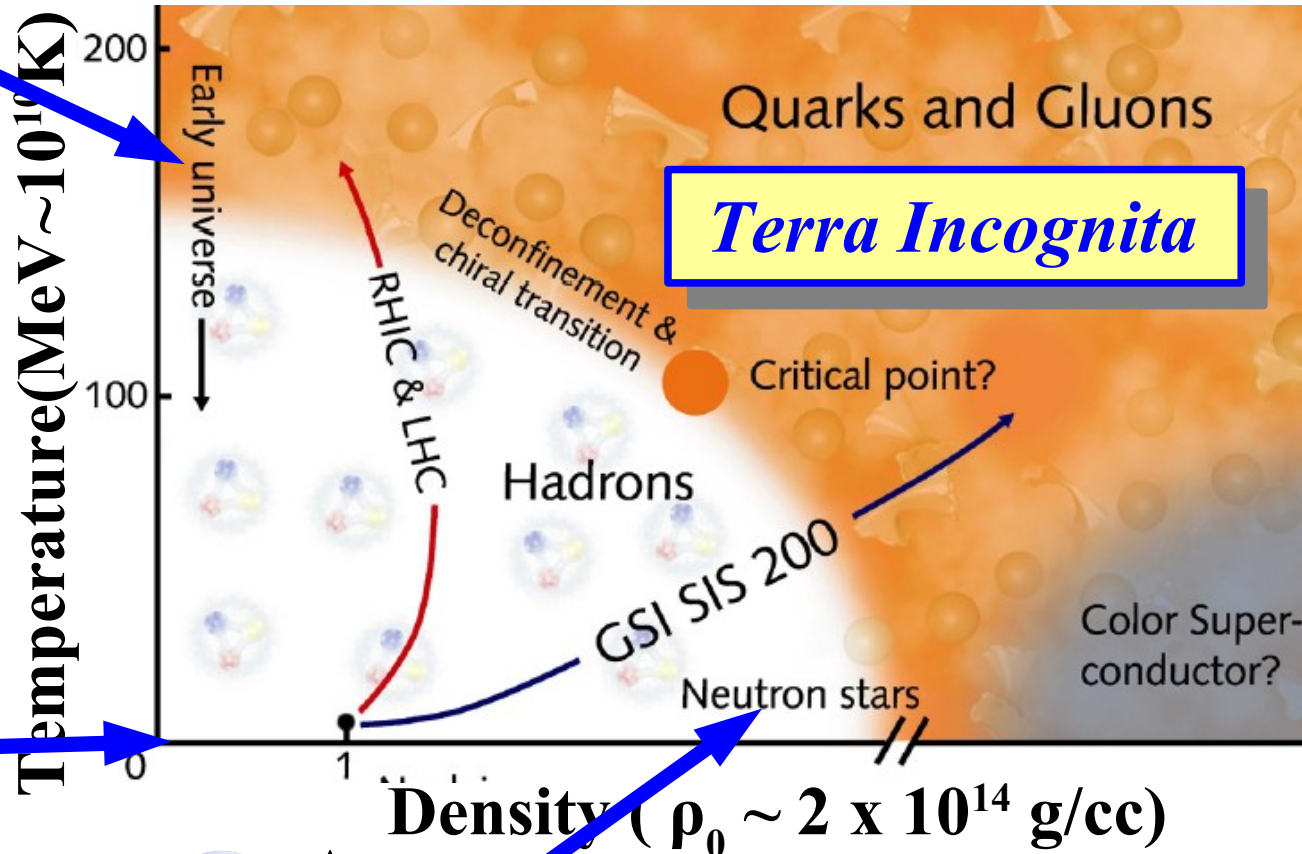
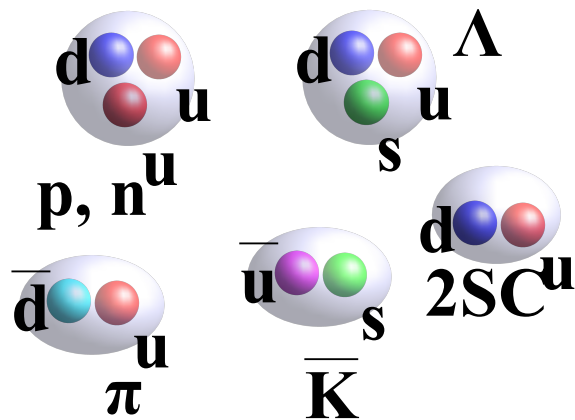
1-3 core participants stay
more than 2 weeks

Quark-Hadron Sciences

RHIC,
LHC



Belle,
SPring8,
BaBar, ...



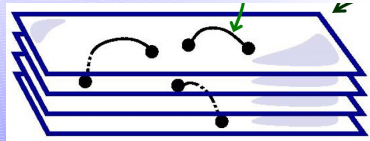
RIBF, J-PARC,
Astro-H, ..

Quark-hadron Sciences

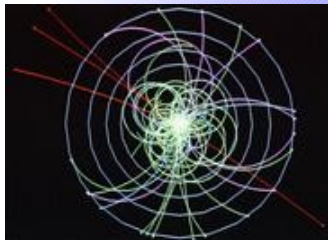
High E. Phys.

Astrophys. & Cosmology

String Theory

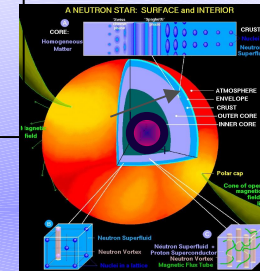


Higgs and Beyond SM

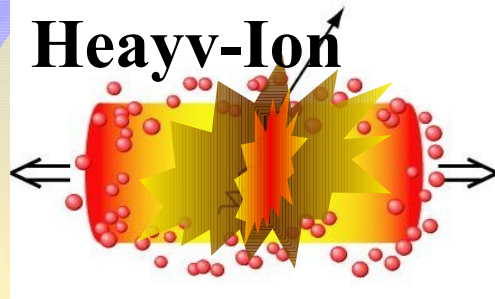


Dark Energy

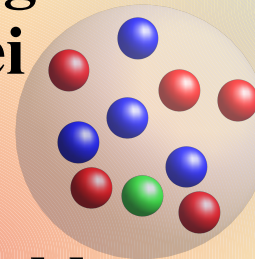
Neutron Star



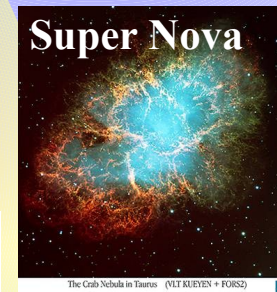
Heavy-Ion



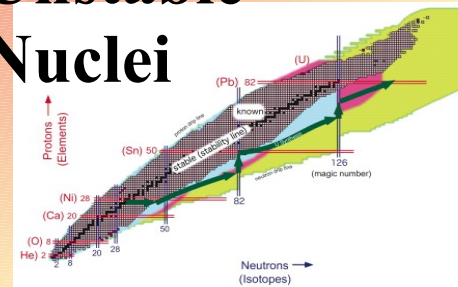
Strangeness Nuclei



Super Nova



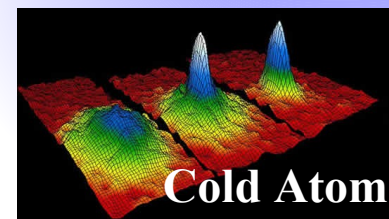
Unstable Nuclei



Novel Supercond.

Exotic Hadrons

Quark-hadron Sciences



Cold Atom

Cond. Matter & Stat. Phys.

YIPQS long-term workshops

High E. Phys.

*Brains/Strings/BH
(BSBH 09)*

*Gravity & Cosmology
(GC 07)*

*Astrophys.
& Cosmology*

Higgs and
Beyond SM

*Gauge/Gravity
Duality 2012*

GC 10

GC 12

Neutron Star

*16 th YKIS
(PPBSM 09)*

NFQCD 08

Dark Energy

*High E. Strong Int.
(HESI 10)*

*SN &
GRB 13*

Super Nova

NFQCD 13

NFQCD 10

*Dyn. & Corr. in
Ex. Nucl. (DCEN 11)*

*Novel Quantum
States in Cond. Matt.*



*Spin Transport
(STCM 08)*

Exotic Hadrons

*Quark-hadron
Sciences*

*YKIS 09
(Non-eq)*

*Cond. Matter
& Stat. Phys.*

*YKIS 07
(Nano & low D)*

YIPQS

2006

proposal of YIPQS
(Kugo, Kunihiro, ...)

2007

*YIPQS is approved
(2007-2011, 5 year prog.)*

2008

2009

*12 int. long-term WSs
21 int. molecule-type WSs*

2010

2011

*YIPQS is upgraded to ordinary
budget (~ 52 Myen, 2011-)*

2012

2013

YIPQS report is required ~ 2013.

2014

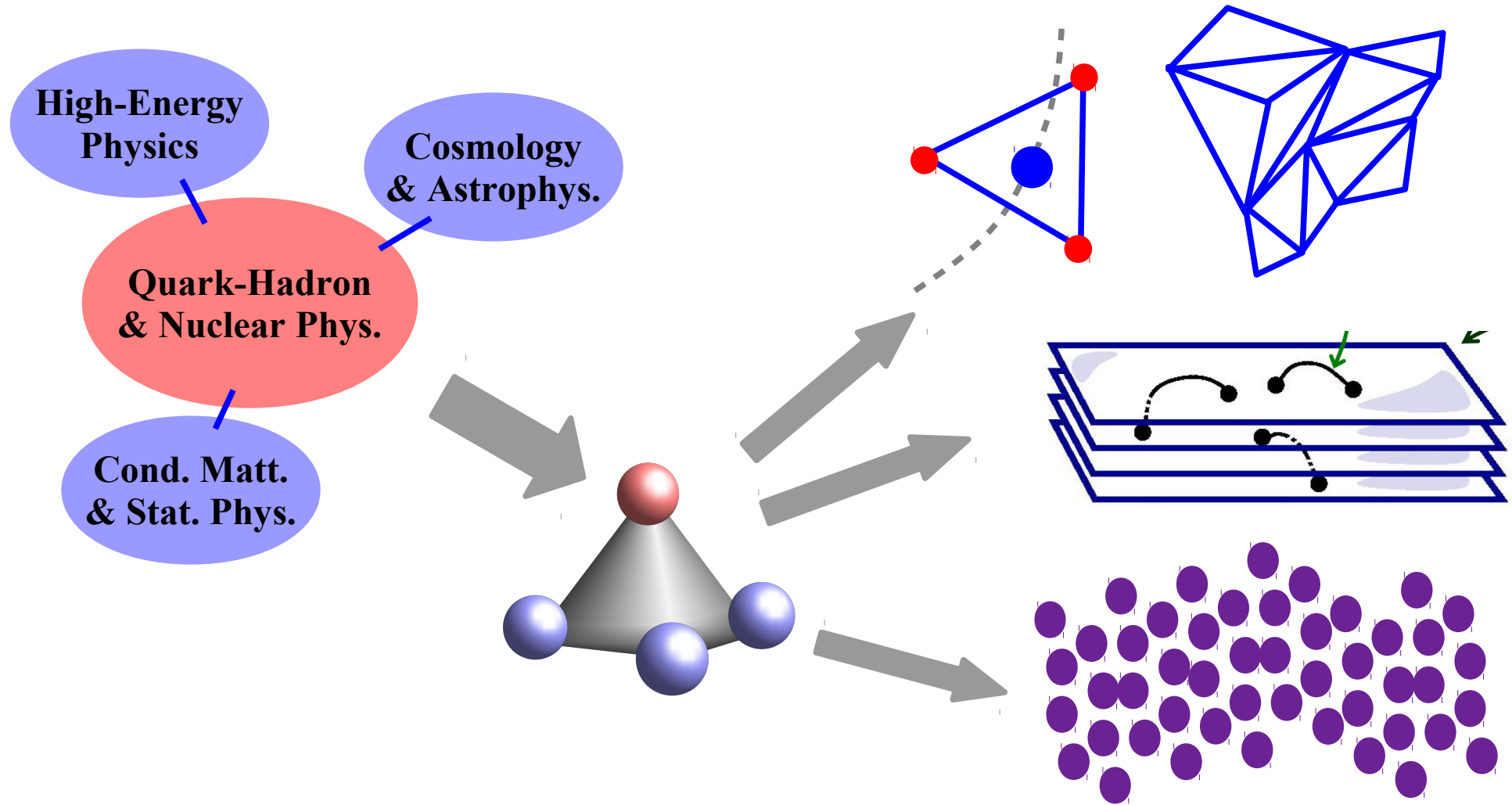
Extension of Scope (2014-)

Director: Eguchi

Next project
'Integrated Center
for Theor. Phys.'
(Eguchi, Kunitomo,
... prepared...)

不戦而屈人之兵
善之善者也 (孫子)
(Win without fight
is the best.)

Quark-hadron sciences to Unification of Theor. Phys.



What is the perspect to unify theoretical physics ?

■ Perspectives in Theoretical Physics

– From Quark-Hadron Sciences to Unification of Theoretical Physics

- To commemorate completion of YIPQS and its successful update, to discuss recent developments, and to give perspectives for the unification of theoretical physics.
- We (organizers) asked world-leading experts to review, to give perspectives in their field, and to chair the session to activate the discussions.

■ Invited Speakers (alphabetic)

M. Creutz (BNL), A. Furusaki (RIKEN), G. W. Gibbons (Cambridge), T. Hatsuda (Tokyo/RIKEN), K. Hosomichi (YITP), C. Maes (Leuven), H. Murayama (IPMU/Berkeley), T. Piran (Hebrew), E. Rabinovici (Hebrew), P. Schuck (Orsay), G. Semenoff (British Columbia), N. Sugiyama (Nagoya), X.-N. Wang (LBNL/CCNU), J. Zaanen (Leiden)

■ Invited Chairs (program order)

Y. Hosotani (Osaka), T. Kunihiro (Kyoto), H. Tasaki (Gakushuin), K. Sato (NINS), Y. Kazama (Tokyo), T. Otsuka (Tokyo), Y. Imamura (TITech), N. Kawakami (Kyoto), T. Nakamura (Kyoto), M. Asakawa (Osaka), Y. Matsuo (Tokyo), H. Tsunetsugu (Tokyo), K. Maeda (Waseda), M. Oka (TITech)

Finally, ...

- **Thank you for coming to Kyoto in this cold season, for your support of this program and YITP, and for your support in the future (in advance).**
- **To all,**
 - We will take a group photo after the morning session today (Feb.6).
 - Banquet fee: 4000 yen for each, 2000 yen for student / accompanying persons.
- **To Speakers,**
 - We collect your slide after your talk.
- **and please enjoy your stay in Kyoto.**



Kyoto, Feb.24, 2008 (photo by B. Muller)