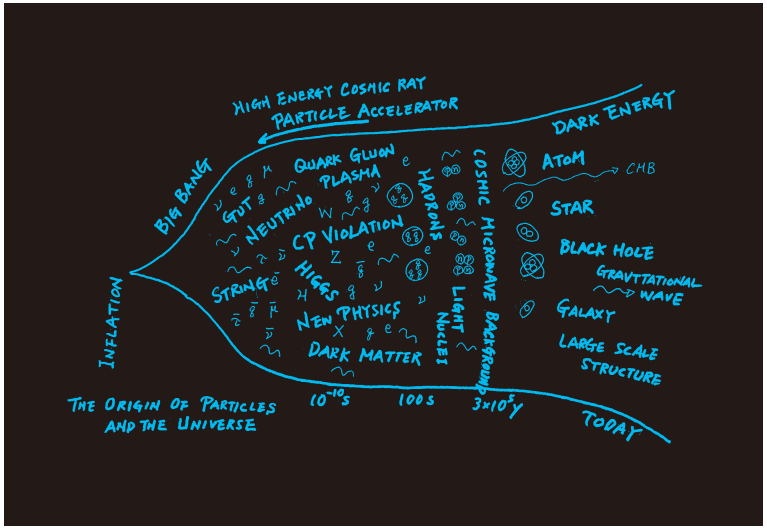
The 7th KMI International Symposium

Opening Remarks

Toru Iijima / Director KMI

November 9, 2026



NAGOYA UNIVERSITY

NAIAS

Kobayashi-Maskawa Institute for the Origin of Particles and the Universe

FlaP
Flavor Physics International Research Center
フレーバー物理学国際研究センター

DarMa
Dark Matter International Research Center
暗黒物質国際研究センター

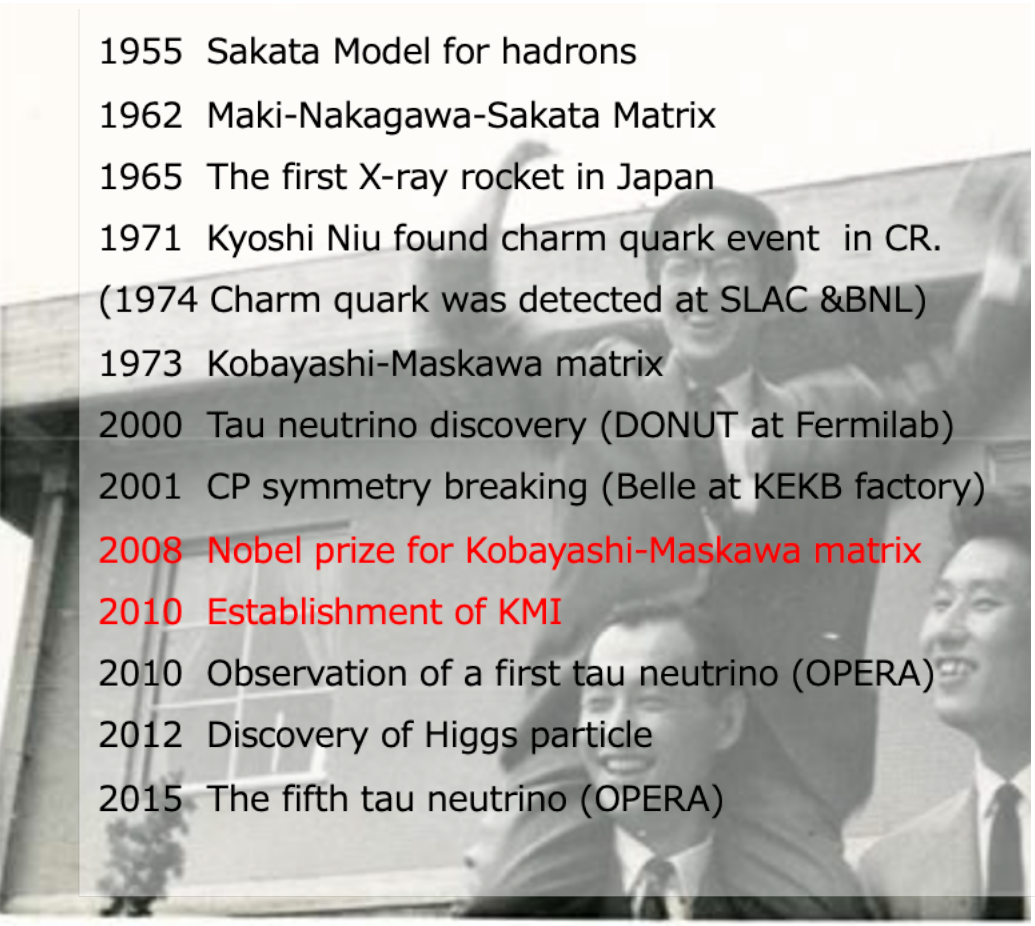
Welcome to KMI, Nagoya





History

Physics at Nagoya University



1955 Sakata Model for hadrons

1962 Maki-Nakagawa-Sakata Matrix

1965 The first X-ray rocket in Japan

1971 Kyoshi Niu found charm quark event in CR.

(1974 Charm quark was detected at SLAC &BNL)

1973 Kobayashi-Maskawa matrix

2000 Tau neutrino discovery (DONUT at Fermilab)

2001 CP symmetry breaking (Belle at KEKB factory)

2008 Nobel prize for Kobayashi-Maskawa matrix

2010 Establishment of KMI

2010 Observation of a first tau neutrino (OPERA)

2012 Discovery of Higgs particle

2015 The fifth tau neutrino (OPERA)

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Shoichi Sakata


Sachio Hayakawa

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CKM

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CKM

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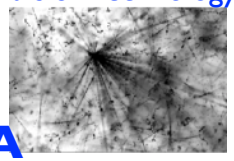
Unique Nuclear Emulsion Technology



Belle



OPERA



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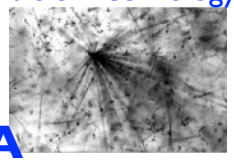
Unique Nuclear Emulsion Technology



Belle



OPERA



Crossover of Theory x Exper./Obs. & Particle x the Universe
& Professors x Students

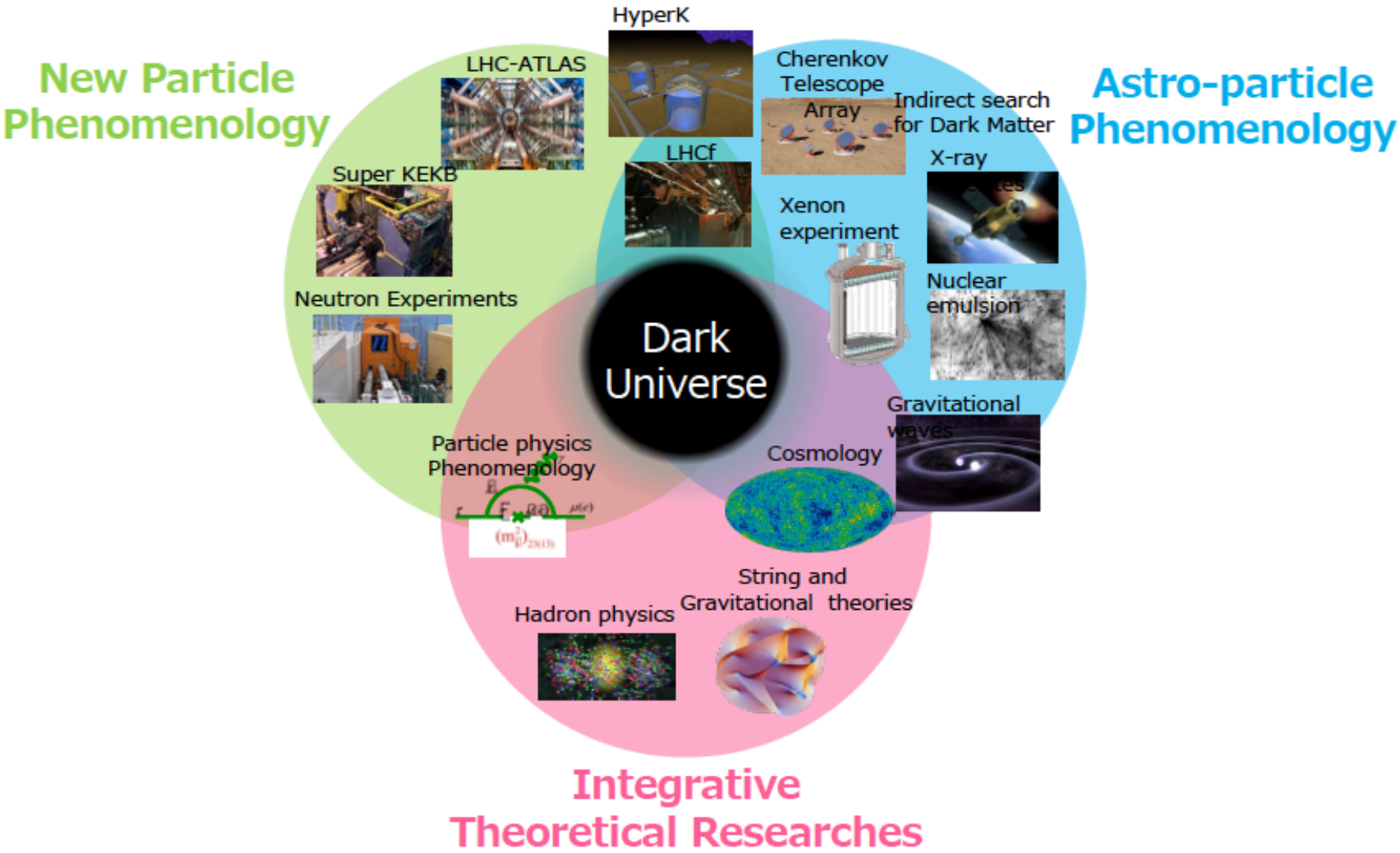
Our Mission in KMI

Shed Light on the Dark Universe



Beyond Kobayashi-Maskawa.

KMI's Three Rings



Recent updates

New initiatives to accelerate activities horizontal between Particle x Universe & Exp. x Theory

FlaP
Flavor Physics International Research Center
フレーバー物理学国際研究センター

April 2023 ~

DarMa
Dark Matter International Research Center
暗黒物質国際研究センター

April 2025 ~



ML/AI initiative lead by Vinicius Mikuni

October 2025 ~

Raising International Collaborations

- KMI Symposium
  - Bi-annual meeting to survey physics highlights + topical hot issues
  - Showcase of KMI researches and activities by young scientists (incl. grad students)
  - KMI 2026 in November 9-11, 2026



- KMI School
  - School for a dedicated hot topic
  - Lectures, hand-on exercise and seminars
  - Invite young students & PD from all over the world.



- KMI visitors to invite foreign researchers
- Dispatch young researchers to overseas researches

KMI Symposium 2026

- Survey physics highlights + topical hot issues
  - Invited talks by world-leading researchers
  - Talks and posters by KMI/Nagoya researches and young scientists (incl. grad students) from Nagoya and outside
- **DarMa kick-off meeting**
  - Special session: November 9 PM
  - + related talks in other sessions.
- Machine learning applications to particle, astro-particle physics and cosmology: November 11 PM
- Reception & poster session: November 9, 18:00-
  - Everyone (in-person) is invited to vote for the poster award.
- Banquet: November 10, 18:00- (free for food & drink)

>150 participants, >30 posters

IceCube Public Lecture



Please Enjoy!

Talks, posters, discussions

Please Enjoy!

Talks, posters, discussions







Please Enjoy!

Talks, posters, discussions







Food & drink



Misokatsu



Hitsumabushi



Tebasaki

Please Enjoy!

Talks, posters, discussions







Food & drink



Misokatsu



Hitsumabushi



Tebasaki

Nagoya



Nagoya city science museum



Toyota commemorative museum of industry and technology



Nagoya castle