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Image: Frontiers of Tsukuba city from Mt. Tsukuba

Frontiers of Precision Cosmology: From the Early Universe to Observational Tensions

2 (Mon) – 5 (Thu), March 2026

Seminar Hall, 1F Bldg. 3 (K03), Tsukuba Campus

KEK, Tsukuba, Japan

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Image: Frontiers of Tsukuba city from Mt. Tsukuba (https://www2.kek.jp/rso/Activities/Travel/pdf/Mt.Tsukuba3-5_9-11.pdf)

About the Workshop

The workshop *Frontiers of Cosmology: From the Early Universe to Observational Tensions* (KEK Cosmo 2025) brings together researchers from cosmology, gravity, particle physics, and quantum information to explore fundamental questions about the early Universe and the latest observations, including current cosmological tensions. The event will begin with two days of foundational lectures covering topics such as gravitational-wave observations with pulsar timing arrays, cosmological tensions, and quantum information. These will be followed by a two-day workshop focusing on related themes introduced in the lectures. The primary goal is to foster collaboration across disciplines and generations, connecting theoretical models with observational data and emerging computational tools to shape the future of precision cosmology.

The workshop also aims to provide young researchers with opportunities to learn about cutting-edge topics and present their own work. The workshop will be held **in person only**.

Topics

- Cosmological tensions
- High frequency Gravitational Waves
- Gravitational Lensing
- Quantum Measurements
- Pulsar Timing Arrays

Invited Speakers

Lecturers

Shi-Fan Chen Columbia University

Atsushi Nishizawa Hiroshima University

Izumi Tsutsui KEK

Workshop Speakers

Yuji Chinone KEK

Elisa Ferreira IPMU

Kentaro Kasai ICRR

Masahiro Nagashima Bunkyo University

Tatsumi Nitta KEK

Teppei Okumura ASIAA

Teruaki Suyama Institute of Science Tokyo

Program

Detailed program is [HERE](https://conference-indico.kek.jp/event/353/timetable/#all.detailed) (https://conference-indico.kek.jp/event/353/timetable/#all.detailed).

A print friendly program is [HERE](#) (./program-print.html).

Banquet

The Banquet for the workshop will be held at the workshop center on **Wednesday, March 4**.

Workshop Fees

- Registration fee: ¥1,000.
- Banquet fee:
 - ¥3,500 for students
 - ¥5,500 for others
- Please pay the **exact amount in cash** at the registration desk.

Deadlines

Deadline for requesting VISA support: **January 05, 2026**

Deadline for applying travel support: **February 02, 2026**

Deadline for abstract submission: **February 02, 2026**

Registration deadline: **February 19, 2026**

Registration Procedures

(日本語版あり)

This workshop will be preceded by the following workshop: **IPNS One-Day Workshop: DESI and related physics**

For more details, please visit the workshop website here:

[IPNS DESI Workshop Home \(https://sites.google.com/view/desi1daykek/home\)](https://sites.google.com/view/desi1daykek/home)

[IPNS DESI Workshop Registration](https://docs.google.com/forms/d/e/1FAIpQLScluPGRWbzyNvF6l6fSRwwoedWpG8oxPQ4iWB53TYkTPOwBHA/viewform?usp=header)

[\(https://docs.google.com/forms/d/e/1FAIpQLScluPGRWbzyNvF6l6fSRwwoedWpG8oxPQ4iWB53TYkTPOwBHA/viewform?usp=header\)](https://docs.google.com/forms/d/e/1FAIpQLScluPGRWbzyNvF6l6fSRwwoedWpG8oxPQ4iWB53TYkTPOwBHA/viewform?usp=header)

Inquiries

Ms. Tomoko Numata, Secretary, Theory Center, IPNS, KEK
email: tomokon[at]post.kek.jp

Venue

Seminar Hall on the ground floor at Building 3 (San-Go-Kan), K03, KEK Tsukuba Campus. [\(Map\)](#)

(<http://www.kek.jp/en/ForResearcher/KEKMap/>)

Come to KEK (<https://www.kek.jp/en/access/tsukuba>)

アクセス (<http://www.kek.jp/ja/Access/>)

Bus: Narita Airport ⇄ Tsukuba Center (https://pfwww.kek.jp/users_info/access/busnrte.html)

Bus: Tsukuba Center ⇄ KEK Bus Stop (https://www2.kek.jp/rso/Access/pdf/KEK_Center.pdf)

Walk: KEK Bus Stop → Bldg. 3 (K03, San-Go-Kan) (<https://maps.app.goo.gl/8pqyGoG1QNeRQF5J7>)



Building 3 (San-Go-Kan)



Seminar Hall

To find the best route to Tsukuba Station, try: <https://world.jorudan.co.jp/mln/en/>
(<https://world.jorudan.co.jp/mln/en/>)

For local dining and more: <https://www2.kek.jp/rso/eng/Map/Restaurantl.html>
(<https://www2.kek.jp/rso/eng/Map/Restaurantl.html>)

Other Information

- **Please be aware of fraudulent emails requesting personal information or financial details in exchange for accommodation. We will never ask for such information. If you receive a suspicious email, please do not reply.**
- If you need a VISA to visit Japan, please see details in [Travel Support](https://conference-indico.kek.jp/event/353/page/728-travel-support) (<https://conference-indico.kek.jp/event/353/page/728-travel-support>).
- [Weather in Tsukuba, Ibaraki Southern Region](https://www.data.jma.go.jp/multi/yoho/yoho_detail.html?code=080020&lang=en) (https://www.data.jma.go.jp/multi/yoho/yoho_detail.html?code=080020&lang=en)

Organizers

- Yuko Urakawa (KEK, Chair)
- Kazuyuki Akitsu (KEK)
- Kazunori Kohri (NAOJ)
- Takahiko Matsubara (KEK)
- Shin'ichi Nojiri (KEK)

- Ippei Obata (KEK)
- Pankaj Saha (KEK)

KEK Theory Center (https://www2.kek.jp/theory-center/theory_e/)

KEK理論センター (<http://www2.kek.jp/theory-center/theory/>)

Sponsors

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- Grant-in-Aid for Scientific Research under Contract JP21KK0050, JP23K25873 (Y. Urakawa)



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