

# KEK-PH Lectures and Workshops 2022

 1 May 2022, 16:00 → 31 Mar 2023, 18:00 Asia/Tokyo

**Description** **"KEK-PH lectures and workshops" is a form of KEK-PH workshop series at the time of Covid-19.**

The annual KEK Theory Meeting on Particle Physics Phenomenology (KEK-PH) covers many topics in Particle Physics and Cosmology, from the Standard Model and models beyond it to particle cosmology and astrophysics. At the time of Covid-19, the KEK theory center is organizing an online lecture and workshop series, "KEK-PH lectures and workshops 2022."

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## The KEK-PH + KEK-Cosmo + QUP joint lectures and workshops 2023 on "Hubble Tension 2023" (21st, Feb. - 22nd Feb. 2023)

The KEK Theory Center and QUP will hold a joint online workshop, "The KEK-PH + KEK-Cosmo + QUP joint lectures and workshops 2023, on Tuesday, February 21 and Wednesday, February 22, 2023. This time, we will discuss the discrepancies in measurements of the Hubble constant announced by various observational teams, and the "Hubble Tension" issue. We will invite experts to discuss the current status and possible future progress on the "Hubble Tension". We look forward to your participation.

Confirmed invited speakers include:

(45+15min) Adam G. Riess (Johns Hopkins U. and Baltimore, Space Telescope Sci.)  
"Observational overview of the Hubble tension"

(45+15min) Yuji Chinone (QUP, KEK)  
"Determinations of the Hubble parameter by CMB observations"

(45+15min) Vivian Poulin (Montpellier U, France)  
"Theoretical overview of some aspects in the Hubble tension"

(45+15min) Tomo Takahashi (Saga U)  
"A solution of the Hubble tension in cosmology and its impact on other cosmological aspects"

(45+15min) Fuminobu Takahashi (Tohoku U)  
"A solution of the Hubble tension in particle physics"

(45+15min) Masamune Oguri (Chiba U)  
"Gravitational lensing to measure the Hubble parameter"

(45+15min) Kenta Hotokezaka (U Tokyo, RESCEU),  
"Gravitational wave to measure the Hubble parameter"

Program

Feb. 21st (Tue.) in JST

09:59 – 10:00 Kaz Kohri (Theory Center/QUP, KEK), Opening Remarks

[Chair: Volodymyr Takhistov (QUP, KEK)]

10:00 – 11:00 Adam G. Riess, "Observational overview of the Hubble tension"

11:00 – 12:00 Yuji Chinone, "Determinations of the Hubble parameter by CMB observations"

(break)

[Chair: Takahiko Matsubara (Theory Center, KEK)]

16:00 – 17:00 Masamune Oguri, "Gravitational lensing to measure the Hubble parameter"

17:00 – 18:00 Vivian Poulin, "Theoretical overview of some aspects in the Hubble tension"

Feb. 22nd (Wed.) in JST

[Chair: Yuko Urakawa (Theory Center, KEK)]

14:00 – 15:00 Tomo Takahashi, "A solution of the Hubble tension in cosmology and its impact on other cosmological aspects"

15:00 – 16:00 Fuminobu Takahashi, "A solution of the Hubble tension in particle physics"

16:00 – 17:00 Kenta Hotokezaka, "Gravitational wave to measure the Hubble parameter"

17:00 – Takahiko Matsubara (Theory Center, KEK), Closing Remarks

Past KEK-PH + KEK-Cosmo Lectures and Workshops Online

<https://conference-indico.kek.jp/event/141/>

<https://conference-indico.kek.jp/event/117/>

A series of KEK-Cosmo Schools and Workshops

<https://research.kek.jp/people/kohri/project2016E.html>

This meeting is being held under the auspices of International Center for Quantum-field Measurement Systems for Studies of the Universe and Particles (QUP)

<https://www2.kek.jp/qup/en/news/>

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**Organizers:** Masashi Aiko, Motoi Endo, Amon Furuichi, Toru Goto, Yu Hamada, Yuta Hamada, Asuka Ito, Minxi He, Ryuichiro Kitano, Kazunori Kohri, Takahiko Matsubara, Ryutaro Matsudo, Satoshi Mishima, Kyohei Mukaida, Kazunori Nakayama, Mihoko M. Nojiri, Yutaka Sakamura, Motoo Suzuki, Hiromasa Takaura, Volodymyr Takhistov, Yuko Urakawa

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## 1st KEK-PH lectures on "Precision measurement of W boson mass"

The CDF collaboration has recently reported the W boson mass which has about 7-sigma deviation from the Standard Model prediction. We will have invited lectures on precise measurement of W boson mass on 10th May. We will discuss QCD effects relevant to the recent measurement by CDF and discuss future measurements at an e+e- collider. New physics interpretation of the recent result will be also discussed.

### Program

May 10th (Tue.)

9:00-9:50: Dr. Joshua Isaacson (Fermilab), "ResBos and CDF W boson mass measurement"

10:00-10:50: Prof. Chien-Peng Yuan (Michigan State University), "The structure of the proton: The CT18 QCD (and QED) Global Analysis"

10:50-11:40: Prof. Graham Wilson (University of Kansas), "Prospects and Perspectives on mW Measurements at a Future e+e- Collider"

16:00-16:50: Prof. Sven Heinemeyer (IFT (CSIC, Madrid)), "Prediction of the W-boson mass in BSM models"

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