

# The Second SUPER-IRNET Workshop

## ~ Sparkling Our Collaboration at the Cosmic Gate~

Date: July 23rd - 26th, 2024 (in Japan time)  
Venue: B-Con Plaza, Beppu, Oita, Japan  
Room: International Conference Room

### Workshop Program (ver. July 19, 2024)

(I) : invited talk / (\*): remote talk

#### 🍷 July 23 (Day1):

##### [Introduction]

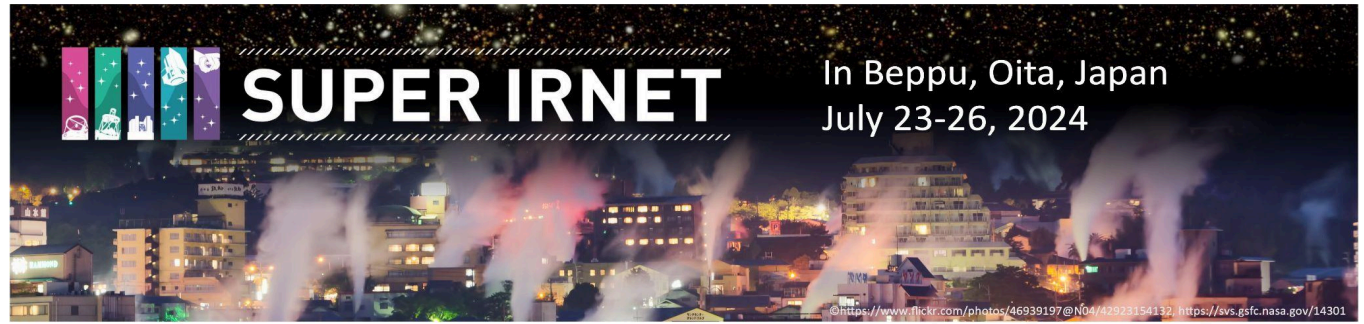
13:00-13:05 Opening Remarks  
Michitoshi Yoshida (NAOJ)  
13:05-13:15 SUPER-IRNET status report  
Yusei Koyama (Subaru Telescope)

(chair: Yusei Koyama)

##### [SWIMS session]

13:15-13:30 "SWIMS and TAO: overview and project status"  
Masahiro Konishi (Univ. of Tokyo)  
13:30-13:45 "Dusty Star-forming or Environmental Quenching? — SWIMS NB1244 Unveils the Hidden Formation inside a 50Mpc Supercluster"  
Zhaoran Liu (Tohoku Univ)  
13:45-14:00 "Dual narrow-band imaging of a protocluster at cosmic noon with SWIMS-18"  
Kazuki Daikuhara (Tohoku University)  
14:00-14:15 "SWIMS strategic observations toward Euclid quasars in the cosmic dawn"  
Yoshiki Matsuoka (Ehime Univ)  
14:15-14:30 "SWIMS-IFU: wide-field near-infrared integral field unit for SWIMS"  
Kosuke Kushibiki (Univ. of Tokyo)

14:30-15:00 (coffee break + poster viewing)



**(chair: Daisuke Suzuki)**

**[General Science: Galaxies and Active Galactic Nuclei]**

15:00-15:15 “*Wide field search for super massive black holes in a rapid growth phase*”

Masayuki Akiyama (Tohoku Univ)

15:15-15:30 “*Cosmic Himalayas: A Possible Synergy with SUPER-IRNET for Understanding the Densest Quasars at Cosmic Noon*”

Yongming Liang (ICRR, Univ. of Tokyo)

15:30-15:45 “*Investigating the Merger-AGN Connection within HSC-SSP*”

Kiyooki Omori (Ehime Univ)

15:45-16:00 “*Unveiling heavily obscured SMBH growth in the early universe*”

Naoki Matsumoto (Tohoku Univ)

16:00-16:15 “*Katachi (形): Decoding the Imprints of Past Star Formation on Present-Day Morphology in Galaxies with Interpretable CNNs*”

Juan Pablo Alfonzo (Tohoku Univ)

16:15-16:35 (coffee break + poster viewing)

**[Euclid session]**

16:35-16:55 “*Euclid Early Release Observations: first science results*”

Jean-Charles Cuillandre [I][\*] (CEA, Paris-Saclay)

16:55-17:15 “*Euclid Operations*”

Reiko Nakajima [I][\*] (Bonn Univ)

17:15-17:30 “*Unlocking the Golden Age of Survey Astronomy With Joint Processing*”

Jason Rhodes (NASA JPL)

17:30-17:45 “*NASA/IPAC Infrared Science Archive support for deep and wide near-infrared surveys*”

Harry Teplitz (Caltech/IPAC)

**🍷 July 24 (Day2)**

**(chair: Masamune Oguri)**

**[ULTIMATE session (I)]**

09:00-09:15 “*ULTIMATE-Subaru Project overview and current status*”

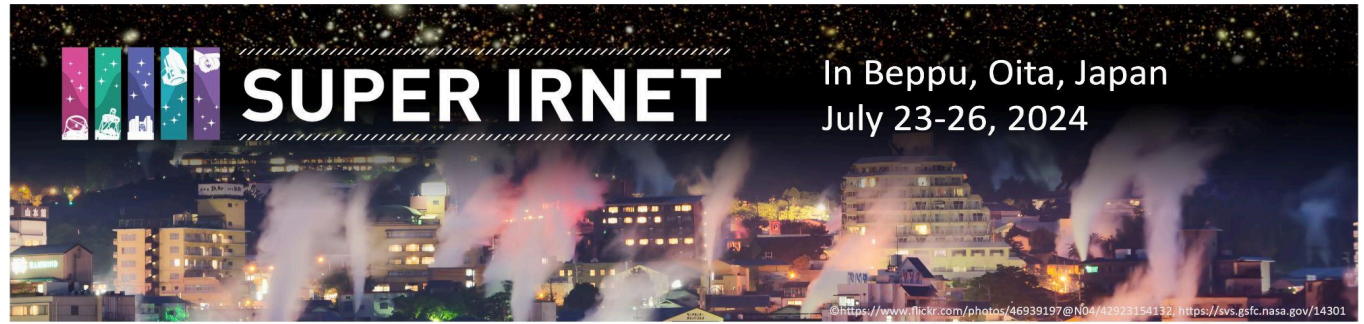
Yosuke Minowa (Subaru Telescope)

09:15-09:30 “*WFI : Wide Field Imager for the ULTIMATE Subaru*”

Kentaro Motohara (NAOJ)

09:30-09:45 “*ULTIMATE development plan in ASIAA*”

Shiang-Yu Wang (ASIAA)



09:45-10:00 *"Wide-field high-z galaxy surveys with ULTIMATE/Subaru and a future space mission GREX-PLUS"*

Akio Inoue (Waseda Univ)

10:00-10:15 *"ULTIMATE-Subaru: NB-survey at Cosmic Noon"*

Tomoko Suzuki (Kavli IPMU)

10:15-10:30 *"Time domain astronomy with ULTIMATE-Subaru"*

Takashi Moriya (NAOJ)

10:30-11:00 Coffee Break

**(chair: Toru Yamada)**

**[ULTIMATE session (II)]**

11:00-11:20 *"Nearby galaxy sciences with ULTIMATE-Subaru"*

Sakurako Okamoto [I] (NAOJ)

11:20-11:35 *"ULTIMATE-Subaru/WFI Galactic Plane Survey"*

Kumiko Morihana (NAOJ)

11:35-11:50 *"Population and structure survey of the Galactic plane using narrow- and medium-band filters"*

Hiroki Onozato (NAOJ)

11:50-12:05 *"Star formation science with ULTIMATE-Subaru"*

Yuhei Takagi (NAOJ)

12:05-12:20 *"Galactic center survey with ULTIMATE"*

Daisuke Suzuki (Osaka Univ)

12:20-14:15 Lunch + poster viewing

**(chair: Hironao Miyatake)**

**[General Science: Galaxies and Cosmology (I)]**

14:15-14:30 *"Evaluating baryonic effects in HSC Y3 cosmic shear data on small scales and prospects for Euclid, Roman, and LSST"*

Ryo Terasawa (Kavli IPMU)

14:30-14:45 *"An elaborate time lapse of CMB lensing up to  $z \sim 2$ "*

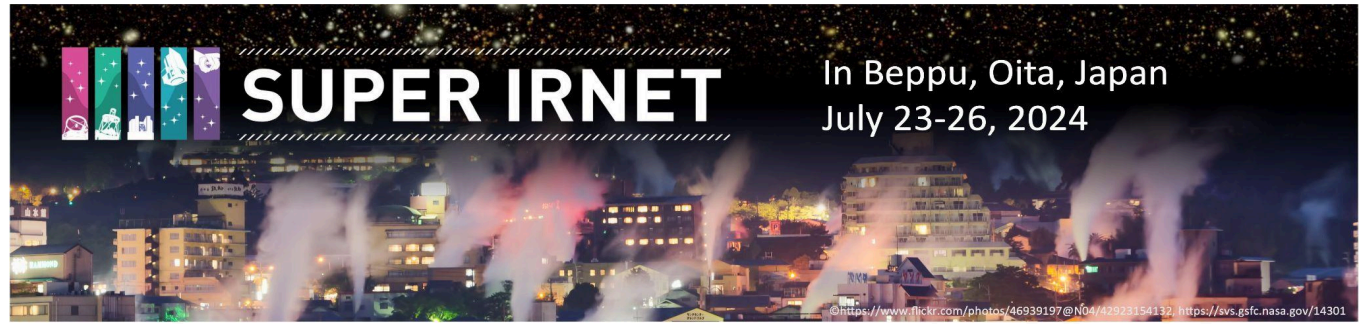
Shun Arai (KMI, Nagoya Univ)

14:45-15:00 *"The construction of analytical methods for testing GR with weak lensing and galaxy clustering from HSC-Y3 and SDSS BOSS"*

Kohki Tanida (Nagoya Univ)

15:00-15:15 *"Breaking the natural barrier: how reliable is cluster detection beyond  $z = 1.4$ ?"*

Rogério Monteiro-Oliveira (ASIAA)



15:15-15:30 “*Exploring Relationship between Assembly bias and Halo properties toward Dark Emulator II*”  
Keitaro Ishikawa (Nagoya Univ)

15:30-15:45 “*Simulation-based Inference for Cluster Cosmology and Weak Lensing Mass Calibration*”  
Sut-leng Tam (ASIAA)

15:45-16:15 (coffee break + poster viewing)

### **[Special Session 1: Diversity & Equality]**

16:15-16:55 “*Don’t assume! The value of diversity and making an inclusive environment for sexual minorities in STEM*”

Euan McKay (Nagoya Univ)

16:55-17:35 “*Shattering the glass universe: inclusivity in ASTRO 3D*”

Tayyaba Zafar (Macquarie Univ)

17:35-17:50 Discussion

### **[19:00- Social Event (Banquet)]**

## **🍷 July 25 (Day3)**

**(chair: Takashi Moriya)**

### **[PRIME session]**

9:00-9:15 “*Status of PRIME NIR telescope*”

Takahiro Sumi (Osaka Univ)

9:15-9:30 “*JASMINE: an infrared space facility for precise measurements*”

Ryou Ohsawa (NAOJ)

9:30-9:45 “*Mira variable stars for tracing stellar populations in the Galactic bulge*”

Noriyuki Matsunaga (Univ. of Tokyo)

9:45-10:00 “*First light PRIMECAM experience*”

Alexander Kutyrav [\*] (NASA GSFC/UMd)

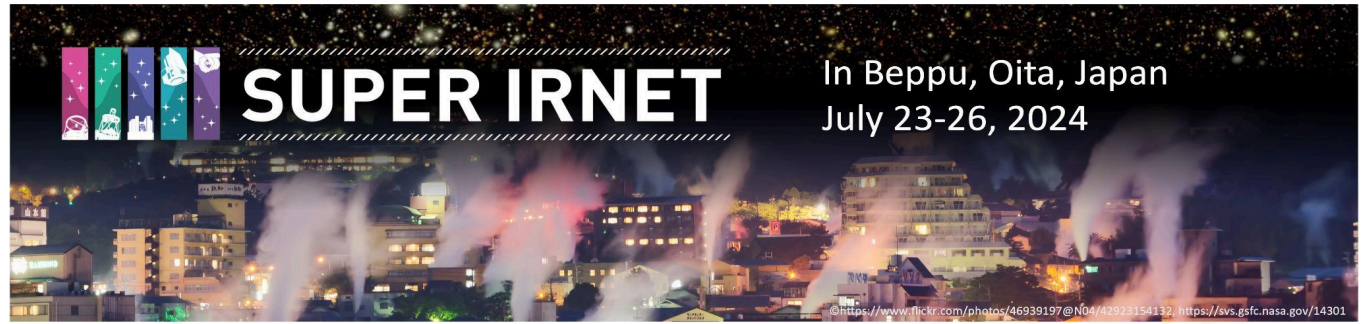
10:00-10:15 “*Development of the South Africa Near-infrared Doppler (SAND) instrument*”

Aoi Takahashi [I] (JAXA/ISAS)

10:15-10:30 “*Nonlinearity correction for PRIME’s detector H4RG*”

Ryusei Hamada (Osaka Univ)

10:30-11:00 (coffee break + poster viewing)



**(chair: Takahiro Sumi)**

**[Special Session 2: MB filter science]**

11:00-11:20 “*HSC medium band survey*”

Atsushi Nishizawa [I] (Gifu shotoku University)

11:20-11:40 “*Large scale structures and galaxy populations across cosmic time traced by medium and narrow band filters*”

Tadayuki Kodama [I] (Tohoku Univ)

11:40-11:55 “*Ruby-Rush: Investigating massive quiescent galaxies at  $z \sim 5$  with SWIMS-18*”

Kosuke Takahashi (Tohoku Univ)

11:55-12:10 “*A comprehensive analysis of H $\alpha$  Emitters at  $z \sim 2.3$  from the Broad- and Medium-band Photometry*”

Nuo Chen (Univ. of Tokyo)

12:10-12:25 “*Introduction to the 7-Dimensional Telescope: Current Status and Survey Plan*”

Ji Hoon Kim (Seoul National University)

**((Free Afternoon))**

**☪ July 26 (Day4)**

**(chair: Yosuke Minowa)**

**[General Science: Galaxies and Cosmology (II)]**

09:00-09:20 “*Studying inside-out vs. outside-in quenching using multi-band photometry*”

Lihwai Lin [I] (ASIAA)

09:20-09:35 “*Resolved stellar population of galaxies in a protocluster core at  $z \sim 3$* ”

Mariko Kubo (Tohoku Univ)

09:35-09:50 “*Mapping the Large Scale Structure and Environmental Dependence of Star Forming and Morphology*”

Ronaldo Laishram [\*] (Tohoku Univ)

09:50-10:05 “*Environmental dependence of gas-phase metallicities and outflows implied for galaxies residing in a cosmic noon cluster core*”

Kota Adachi (Tohoku Univ)

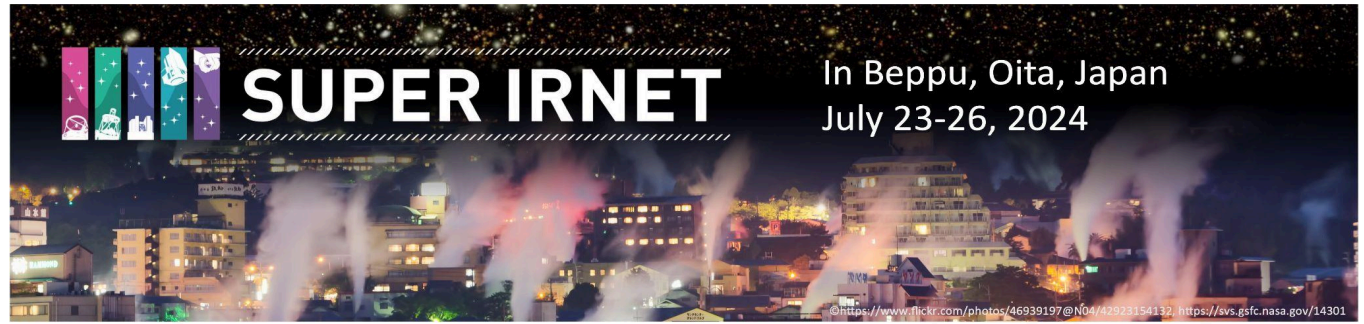
10:05-10:20 “*Probing the cosmic web with FRBs*”

Sunil Simha (UC Santa Cruz)

10:20-10:35 “*SPHEREx Ice Sources and IRTF spectra*”

Ho-Gyu Lee (KASI)

10:35-11:00 (coffee break + poster viewing)



### [Roman session (I)]

11:00-11:20 "NASA's Roman Space Telescope"

Julie McEnery [I] (NASA/GSFC)

11:20-11:35 "*OpenUniverse: Simulated mocks and images for Stage IV surveys*"

Alina Kiessling (NASA/JPL)

11:35-11:50 "*Multi-wavelength Cosmological Simulations for Stage-IV Surveys*"

Ken Osato (Chiba Univ)

11:50-12:05 "*PFS for Photometric Redshift Training and Calibration: Synergies with Roman and Beyond*"

Jeff Newman [\*] (University of Pittsburgh / PITT PACC)

12:05-13:45 Lunch

(chair: Kentaro Motohara)

### [Roman session (II)]

13:45-14:00 "*Cosmic Dawn with Roman and Subaru*"

James Rhoads [\*] (NASA/GSFC)

14:00-14:15 "*Studying the Cosmic Dawn at  $z > 10$  with Roman*"

Yuichi Harikane (Univ. of Tokyo)

14:15-14:30 "*Star-formation at Cosmic Noon with Roman + Subaru spectroscopy*"

Sangeeta Malhotra (NASA/GSFC)

14:30-14:50 "*Free-floating planet mass function from the MOA-II survey and expectations for Roman, Euclid, and PRIME*"

Naoki Koshimoto [I] (Osaka Univ)

14:50-15:05 "*Toward the host star mass dependence of the planet frequency in Roman era*"

Kansuke Nunota (Osaka Univ)

15:05-15:20 "*Building the largest mock catalogue of the Milky Way centre in the Near Infrared*"

Pau Ramos (NAOJ)

15:20-15:50 Coffee Break

### [Future & Discussion]

15:50-16:25 Discussion

16:25-16:30 Concluding Remarks