

Program

[Wednesday, 14th, December, 2022]

10:00–10:05 | Opening Remarks

Chairs: Jung-Won Lee (KASI)

10:05–10:40 | I-1

ALMA Band 1 receiver performance and first light

Teddy Huang, Senior Research Engineer

Institute of Astronomy and Astrophysics, Academia Sinica (ASIAA)

10:40–10:55 | O-1

**First light of 7 BEam Equipment with 3-frequency-band in 72-116 GHz
for multi-line observations on the Nobeyama 45-m telescope: (1)**

Receiver system and its performances

Sho YONEYAMA, OMU, Japn

10:55–11:10 | O-2

Introduction to multi-band receiver system for radio astronomy

Seog-Tae HAN, KASI, Korea

11:10–11:25 | O-3

**Current and Future Prospects with Simultaneous Multi-Frequency
Receivers in mm-VLBI**

Taehyun JUNG, KASI, Korea

11:25–11:40 | O-4

**CSV activities of extended Q-band (eQ) receiver at Nobeyama 45-m
telescope**

Chau-Ching CHIONG, ASIAA, Taiwan

11:40–11:55 | O-5

Development of wSMA receiver and new cryostat

Johnson Han, ASIAA, Taiwan

11:55–12:10 | O-6

Upgrade of the heterodyne SIS receiver for the LCT

Duo CAO, SNU, China

12:10-12:20 Photo

12:20-13:20 Lunch

Chairs: Wenlei Shan (NAOJ)

13:20-13:35 | O-6

Millimeter detector developments at IHEP

Shibo SHU, HEP, China

13:35-13:50 | O-7

Development of DESHIMA 2.0: Laboratory demonstration of the ultra-sideband integrated superconducting

Kenichi KARATSU, SRON, Netherland

13:50-14:05 | O-8

Design of wide band corrugated horn with constant pitch for DRIE

Bangwon LEE, ASIAA, Taiwan

14:05-14:20 | O-9

Arrayed HEMT Detectors for terahertz imaging

Hua QIN, SINANO, China

14:20-15:05 Poster Video

15:05-05:20 Coffee Break

Chairs: Shinichiro Hayashi (NICT)

15:20-15:55 | I-2

Resonant tunneling diodes for future THz application

Safumi SUZUKI, Associate Professor

15:55-16:20 | O-10

**Backward THz-wave parametric oscillator and nondestructive imaging
with linear array detector**

Yuma TAKIDA, RIKEN, Japan

16:20-16:45 | O-11

THz irradiation effects on morphology of actin protein and cell function

Hiromichi HOSHINA, RIKEN, Japan

16:45-17:10 | O-12

**Progress of THz-QCL toward high-power and room temperature
operation**

Hideki HIRAYAMA, RIKEN, Japan

17:10-18:40 Poster Session

18:40 [Session End]

[Thursday, 15th, December, 2022]

Chairs: Chiko Otani (RIKEN)

9:30–10:05 | I-3

Strong Electron - LO phonon Coupling : Intersubband Polarons

Susumu KOMIYAMA, professor emeritus,
University of Tokyo

10:05-10:30 | O-13

Recent Progress of THz Frequency Standards and Metrology at NICT

Shigeo NAGANO, NICT

10:30-10:55 | O-14

InGaSb/AlInGaSb-based and two-well THz-QCL structures for higher-temperature operation

Hiroaki YASUDA, NICT

10:55-11:20 | O-15

Recent progress of THz technology in NICT

Yoshihisa IRIMAJIRI, NICT

11:20-11:35 Coffee Break

Chairs: Masumichi Seta (KGU)

11:35-12:10 | I-4

Cryogenic RF components for SC qubit characterization

Kunihiro INOMATA, Team Leader
National Institute of Advanced Industrial Science and Technology (AIST)

12:10-12:25 | O-16

Difficulties in RF noise measurement of SIS mixers

Wenlei SHAN, NAOJ, Japan

12:25-12:40 | O-17

Development of the wide IF 230 GHz SIS mixer design for KVN-Pyeongchang VLBI station

Naeun SHIN, KASI, Korea

12:40-12:55 | O-18

Sub-mm band SIS mixer with Nb/AlN/NbN tunnel junctions

Boliang LIU, PMO, China

12:55-14:00 Lunch

Chairs: Teddy Huang (ASIAA)

14:00-14:15 | O-19

A Study on the Effect of Aberrations on the Design of High-Aperture Efficiency Optics for (Sub)Millimeter Multibeam Receivers

Takaho MASAI, NAOJ, Japan

14:15-14:30 | O-20

Reflector surface error measurement on Tianma radio telescope

Jinqing WANG, SAO, China

14:30-14:45 | O-21

Tolerance analysis of a radio-telescope optical system

Hiroaki IMADA, NAOJ, Japan

14:45-15:00 | O-22

69-115GHz hybrid coupler with 0.5dB amplitude imbalance

Chien CHEN, ASIAA, Taiwan

15:00-15:15 | O-23

Development of circular polarizers in 6.5 –12.5 GHz band for the Ibaraki and Yamaguchi 32m radio telescopes

Tsubasa CHINEN, OMU, Japan

15:15-15:30 Coffee Break

Chairs: Yoshinori Uzawa (NAOJ)

15:30-16:05 | I-5

Josephson parametric amplifier for superconducting quantum computing

16:05-16:20 | O-24

NbN- and NbTiN-base Kinetic Inductance Traveling-Wave Parametric Amplifiers (KITWPAs) for Quantum Information Circuits

Chun-Lun WANG, ASIAA, Taiwan

16:20-16:35 | O-25

New control process of Oxygen exposure for the fabrication of high quality Nb/Al-AlO_x/Nb Josephson junctions

Yen-Pin CHANG, ASIAA, Taiwan

16:35-16:50 | O-26

NbN and NbTiN films on 2-inch Silicon Wafers with AlN Buffer-layer – Growth and their Structural and Superconducting Properties

Hsiao-Wen CHANG, ASIAA, Taiwan

16:50-17:05 | O-27

Terahertz semiconductor laser frequency combs

Hua LI, SIMIT, China

17:05-17:20 | O-28

A triple band local oscillator system based on a phase grating for DATE5 telescope

Guoao XIE, PMO, China

17:20-17:25 | Closing Remarks

17:25 [Session End]

Poster Session

[5:10-6:40 p.m., December 14, 2022]

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- P-1 Injection-seeded 0.87-THz Backward Terahertz-Wave Parametric Oscillator
Joselito Muldera, RIKEN
- P-2 Sensitive THz-wave detection using photon conversion in a backward-wave optical parametric configuration
Deepika Yadav, RIKEN
- P-3 Backward Terahertz-wave parametric oscillator with tunable frequency in 0.5-THz range
Keisuke Kajikawa, RIKEN
- P-4 Future prospects of GaAs, GaN and ZnO-based THz-QCL toward room temperature operation
Li Wang, RIKEN
- P-5 Design and recent progress of surface emitting THz-QCL
Mingxi Chen, RIKEN
- P-6 Development of 300 GHz Walk-through Body Scanner
Yoshiaki Sasaki, RIKEN
- P-7 Investigation of mid-infrared photon detector by hot electron bolometer
Akira Kawakami, NICT
- P-8 Frequency Standard in Terahertz region
Masatoshi Kajita, NICT
- P-9 Frequency control of terahertz wave using a spectral drill cavity
Tatsuhisa Koiwa, NICT
- P-10 THz wireless transmission system at 2 THz
Isao Morohashi, NICT

- P-11 Development Progress of TSUKIMI mission
Yuki Uchiyama, NICT
- P-12 Saturated amplification of strong THz electromagnetic waves traveling in a THz quantum cascade laser
Yohei Sakasegawa, NICT
- P-13 Numerical analysis of periodically poled LiNbO₃ slab waveguide device for terahertz wave generation
Tadashi Kishimoto, NICT
- P-14 Lithium niobate based slot waveguides operating at sub-terahertz frequencies
Kentaro Furusawa, NICT
- P-15 287-GHz-f_{max} GaN-HEMTs and output power performance at 70 GHz
Issei Watanabe, NICT
- P-16 265-GHz Si CMOS Receiver for THz Wireless Communications
Shinsuke Hara, NICT
- P-17 Nanostructurally-engineered quantum materials and devices for IR, THz and MMW sensing
Mikhail Patrashin, NICT
- P-18 Antarctic 30-cm Submm Telescope Project
Nario Kuno, University of Tsukuba
- P-19 Investigations of Nb₃Ge Thin Films on Si Substrates
Mina Matsuura, The University of Electro-Communications
- P-20 Improvement in Gain Stability of 20 GHz Receiver
Tai Kawachi, Kwansai Gakuin University
- P-21 Aperture efficiency of Multi-beam Axisymmetric Dual-reflector Antenna
Makoto Nagai, NAOJ
- P-22 Application of Metal 3D Printing Technology in High-Performance Millimeter-Wave

Corrugated Horns

Haoran Kang, The University of Tokyo

P-23 Evaluation of a Cryostat for THz Intensity Interferometer

Rina Enohi, Toho university

P-24 Development of a receiving system using Frequency-Modulating Local Oscillator to improve the efficiency of atmospheric ozone observation

Takumi Hikosaka, Nagoya University

P-25 Responsivity Evaluation of the 100-GHz Band MKID Camera with Various Optical Loading Conditions

Yosuke Murayama, NAOJ

P-26 Development of Wideband Antenna

Hideki Ujihara, Kyoto University

P-27 Non-reciprocal microwave circuit based on phase-controlled two-frequency-converter configuration

Takafumi Kojima, NAOJ

P-28 Development of Superconducting Waveguide for Ultra-Low-Loss Propagation in Millimeter-Band Receiver

Tac Nakajima, Nagoya University

P-29 Measurement of waveguide-to-CPW transitions on planar-integrated SIS mixer at 3.3 K

Akihiro Masukura, Nagoya University

p-30 First light of 7 BEam Equipment with 3-frequency-band in 72-116 GHz for multi-line observations on the Nobeyama 45-m telescope:(2) Commissioning science verification and preliminary results

Atsushi Nishimura, NAOJ

P-31 Laboratory Experiments on THz Intensity Interferometry

Hiroshi Matsuo, NAOJ

