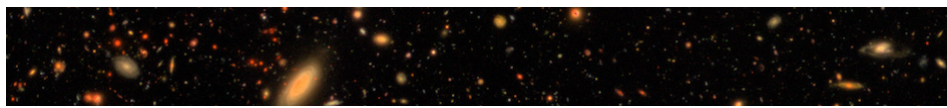


**FY2022 ”What is dark matter?
- Comprehensive study of the
huge discovery space in dark
matter”**



Report of Contributions

Contribution ID: 1

Type: **not specified**

Opening Remark

Tuesday, 7 March 2023 10:00 (15 minutes)

Presenter: MURAYAMA, Hitoshi (Kavli IPMU)

Session Classification: Opening & A01

Contribution ID: 2

Type: **not specified**

Research summary of A01 group

Tuesday, 7 March 2023 10:45 (5 minutes)

Presenter: TAKAHASHI, Fuminobu (Tohoku University)

Session Classification: Opening & A01

Contribution ID: 3

Type: **not specified**

invited talk: "Aspects of Light Scalar Dark Matter"

Tuesday, 7 March 2023 10:15 (30 minutes)

Presenter: HERTZBERG, Mark (Tufts)

Session Classification: Opening & A01

Contribution ID: 4

Type: **not specified**

Cascades of high-energy particles and non-thermal DM production in the pre-thermal phase

Tuesday, 7 March 2023 10:50 (20 minutes)

Presenter: YAMADA, Masaki

Session Classification: Opening & A01

Contribution ID: 5

Type: **not specified**

Production of light dark photon dark matter in the early universe

Tuesday, 7 March 2023 11:10 (20 minutes)

Presenter: KITAJIMA, Naoya

Session Classification: Opening & A01

Contribution ID: 6

Type: **not specified**

Dark Higgs early dark energy by axion-induced trapping effect

Tuesday, 7 March 2023 11:30 (20 minutes)

Presenter: NAKAGAWA, Shota (Tohoku)

Session Classification: Opening & A01

Contribution ID: 7

Type: **not specified**

invited talk: "Waves in the sky: probing ultra-light dark matter wave interference with strong lensing"

Thursday, 9 March 2023 14:45 (30 minutes)

Presenter: FERREIRA, Elisa (IPMU)

Session Classification: B01 & Closing

Contribution ID: 8

Type: **not specified**

Concluding Remark

Thursday, 9 March 2023 16:15 (15 minutes)

Presenter: MURAYAMA, Hitoshi (Kavli IPMU)

Session Classification: B01 & Closing

Contribution ID: 9

Type: **not specified**

B06 Group Summary

Tuesday, 7 March 2023 14:00 (5 minutes)

Presenter: KOMATSU, Eiichiro (MPA / Kavli IPMU)

Session Classification: B06

Contribution ID: **10**

Type: **not specified**

invited talk: Cosmic Structures in a Fuzzy Dark Matter Universe

Tuesday, 7 March 2023 13:30 (30 minutes)

Presenter: FIALKOV , Anastasia

Session Classification: B06

Contribution ID: 11

Type: **not specified**

invited talk: Studying dark matter with observations of small-scale structure

Wednesday, 8 March 2023 09:00 (30 minutes)

Presenter: DRLICA-WAGNER, Alex (Fermilab / Chicago)

Session Classification: B02

Contribution ID: 12

Type: **not specified**

Invited talk: Primordial black holes: a possible explanation for dark matter?

Thursday, 9 March 2023 13:00 (30 minutes)

Presenter: MUSCO, Ilia (Rome)

Session Classification: A03

Contribution ID: 13

Type: **not specified**

invited talk: Galaxies in the axiverse

Wednesday, 8 March 2023 10:40 (30 minutes)

Presenter: DALAL, Neal (Perimeter)

Session Classification: C02

Contribution ID: 14

Type: **not specified**

invited talk: Particle physics models that predict dark matter in the form of primordial black holes

Thursday, 9 March 2023 13:30 (30 minutes)

Primordial black hole is a dark matter candidate in a variety of existing models of physics beyond the standard model, including supersymmetry models and models with asymmetric dark matter. I will review the formation of black holes in such scenarios, as well as the effects of predicted PBHs on astrophysics and cosmology.

Presenter: KUSENKO, Alexander (UCLA and Kavli IPMU)

Session Classification: A03

Contribution ID: 15

Type: **not specified**

Weak lensing effect on cosmic birefringence and its tomographic analysis

Tuesday, 7 March 2023 14:05 (20 minutes)

Presenter: NAKAWA, Fumihiro (U. Tokyo)

Session Classification: B06

Contribution ID: 16

Type: **not specified**

Implications of the cosmic birefringence measurement for the axion monodromy

Tuesday, 7 March 2023 14:25 (20 minutes)

Presenter: OBATA, Ippai

Session Classification: B06

Contribution ID: 17

Type: **not specified**

Cosmic birefringence tomography with polarized Sunyaev-Zel'dovich effect

Tuesday, 7 March 2023 14:45 (20 minutes)

Presenter: NAMIKAWA, Toshiya (IPMU)

Session Classification: B06

Contribution ID: **18**

Type: **not specified**

Status report of B04 group

Tuesday, 7 March 2023 15:25 (5 minutes)

Presenter: YAMASAKI, Noriko (JAXA/QUP)

Session Classification: B04

Contribution ID: 19

Type: **not specified**

Structure optimization of TES microcalorimeter for 14.4-keV solar axion search by electro-thermal simulation

Tuesday, 7 March 2023 15:30 (20 minutes)

Presenter: TANAKA, Keita (JAXA)

Session Classification: B04

Contribution ID: 20

Type: **not specified**

Progress of the Microwave Multiplexing (MWMUX) for X-ray TES Calorimeters

Tuesday, 7 March 2023 15:50 (20 minutes)

Presenter: KIKUCHI, Takahiro (JAXA)

Session Classification: B04

Contribution ID: 21

Type: **not specified**

Design of the Observational Setup for Solar Axion Search with TES Microcalorimeters -Practical Configuration and Sensitivity

Tuesday, 7 March 2023 16:10 (20 minutes)

Presenter: YAGI, Yuta (JAXA)

Session Classification: B04

Contribution ID: 22

Type: **not specified**

Status report of B02 group

Wednesday, 8 March 2023 09:30 (10 minutes)

Presenter: TAKADA, Masahiro (Kavli IPMU)

Session Classification: B02

Contribution ID: 23

Type: **not specified**

Updates of PFS instrumentation

Wednesday, 8 March 2023 09:40 (20 minutes)

Presenter: TAMURA, Naoyuki (IPMU)

Session Classification: B02

Contribution ID: 24

Type: **not specified**

Cosmology with Subaru HSC survey

Wednesday, 8 March 2023 10:00 (20 minutes)

Presenter: SUGIYAMA, Sunao (IPMU)

Session Classification: B02

Contribution ID: 25

Type: **not specified**

C02 update on structure formation

Wednesday, 8 March 2023 11:10 (10 minutes)

Presenter: ANDO, Shin'ichiro

Session Classification: C02

Contribution ID: 26

Type: **not specified**

Dark matter density profile estimation with cosmology models

Wednesday, 8 March 2023 11:20 (15 minutes)

Presenter: Mr Horigome, Shunichi (Kavli IPMU)

Session Classification: C02

Contribution ID: 27

Type: **not specified**

Innermost structure of dark matter halos: finding a clue of dark matter

Wednesday, 8 March 2023 11:35 (15 minutes)

Presenter: TARUYA, Atsushi (YITP)

Session Classification: C02

Contribution ID: 28

Type: **not specified**

A semi-analytic model of self-interacting dark matter substructures

Wednesday, 8 March 2023 11:50 (15 minutes)

Presenter: SHIRASAKI, Masato (ISM/NAOJ)

Session Classification: C02

Contribution ID: 29

Type: **not specified**

Dark Matter in the Galactic dwarf satellites

Wednesday, 8 March 2023 12:05 (15 minutes)

Presenter: Dr HAYASHI, Kohei (Institute for Cosmic Ray Research, The University of Tokyo)

Session Classification: C02

Contribution ID: **30**

Type: **not specified**

Status report of C01 group

Wednesday, 8 March 2023 13:30 (10 minutes)

Presenter: YAMAZAKI, Masahito (Kavli IPMU)

Session Classification: C01

Contribution ID: 31

Type: **not specified**

Toward quantum gravity constraints on dark matters

Wednesday, 8 March 2023 13:50 (20 minutes)

Presenter: NOUMI, Toshifumi (Kobe Univ.)

Session Classification: C01

Contribution ID: 32

Type: **not specified**

Towards global S-matrix constraints on dark matter physics

Wednesday, 8 March 2023 14:10 (20 minutes)

Presenter: AOKI, Katsuki (YITP)

Session Classification: C01

Contribution ID: 33

Type: **not specified**

Dark Matter Search with e+ e- collider: B05 Status Report

Wednesday, 8 March 2023 14:30 (30 minutes)

Presenter: NISHIDA, Shohei (KEK)

Session Classification: B05

Contribution ID: 34

Type: **not specified**

Study of Z' Boson at e+ e- collider

Wednesday, 8 March 2023 15:00 (30 minutes)

Presenter: CZANK, Thomas (Tokyo Metropolitan U.)

Session Classification: B05

Contribution ID: 35

Type: **not specified**

Multimessenger Study of Heavy Dark Matter: A02 Group Status Report

Thursday, 9 March 2023 09:30 (15 minutes)

Presenter: NARUKO, Atsushi (Frontier Research Institute for Interdisciplinary Sciences, Tohoku University)

Session Classification: A02

Contribution ID: 36

Type: **not specified**

Cosmological Aspects of Massive Dark Matter Particles

Thursday, 9 March 2023 09:45 (15 minutes)

Presenter: HIROSHIMA, Nagisa (Toyama Univ.)

Session Classification: A02

Contribution ID: 37

Type: **not specified**

Updates on Cosmic Ray Extensive Air Showers Detected with Subaru Hyper Supreme-Cam

Thursday, 9 March 2023 10:00 (15 minutes)

Presenter: FUJII, Toshihiro (Osaka Metropolitan Univ.)

Session Classification: A02

Contribution ID: 38

Type: **not specified**

Constraining Very Heavy Dark Matter with Fermi-LAT Gamma-Ray Data

Thursday, 9 March 2023 10:15 (15 minutes)

Presenter: SONG, Deheng (YITP)

Session Classification: A02

Contribution ID: 39

Type: **not specified**

Probing GUT-Scale Dark Matter with Multimessengers

Thursday, 9 March 2023 10:30 (15 minutes)

Presenter: DAS, Saikat (YITP)

Session Classification: A02

Contribution ID: 40

Type: **not specified**

A03 group updates

Thursday, 9 March 2023 14:00 (30 minutes)

Presenter: YOO, Chulmoon (Nagoya Univ.)

Session Classification: A03

Contribution ID: 41

Type: **not specified**

Laser interferometric searches for ultralight dark matter: Updates from B01 group

Thursday, 9 March 2023 15:15 (10 minutes)

Presenter: MICHIMURA, Yuta (Caltech / RESCEU)

Session Classification: B01 & Closing

Contribution ID: 42

Type: **not specified**

Vector Dark Matter Search with KAGRA -updates for O3GK data analysis-

Thursday, 9 March 2023 15:25 (25 minutes)

Presenter: KUME, Jun'ya (Univ. of Tokyo)

Session Classification: B01 & Closing

Contribution ID: 44

Type: **not specified**

Isotropic cosmic birefringence from early dark energy

Tuesday, 7 March 2023 11:50 (20 minutes)

Presenter: MURAI, Kai (Univ. of Tokyo)

Session Classification: Contributed Talks

Contribution ID: 45

Type: **not specified**

Dark Matter and Quantum Gravity

Wednesday, 8 March 2023 13:40 (10 minutes)

Presenter: SHIRAI, Satoshi (Kavli IPMU, University of Tokyo)

Session Classification: C01

Contribution ID: 46

Type: **not specified**

Recent Upgrades and Future Prospects of DANCE

Thursday, 9 March 2023 16:03 (12 minutes)

Presenter: FUJIMOTO, Hiroki (Univ. of Tokyo)

Session Classification: B01 & Closing

Contribution ID: 47

Type: **not specified**

First Results of Axion Dark Matter Search with DANCE

Thursday, 9 March 2023 15:50 (12 minutes)

Presenter: OSHIMA, Yuka (Univ. of Tokyo)

Session Classification: B01 & Closing

Contribution ID: 48

Type: **not specified**

"ISAI" Investigating Solar Axion by Iron-57

Thursday, 9 March 2023 11:40 (20 minutes)

Presenter: TSURU, Takeshi (Kyoto Univ.)

Session Classification: Contributed Talks

Contribution ID: 49

Type: **not specified**

B03 updates

Thursday, 9 March 2023 11:00 (20 minutes)

Presenter: MIYAZAKI, Satoshi (Hawaii Observatory, NAOJ)

Session Classification: B03

Contribution ID: 50

Type: **not specified**

Gravitational waves as a probe of the small-scale dark matter distribution

Thursday, 9 March 2023 11:20 (20 minutes)

Presenter: OGURI, Masamune (Chiba U.)

Session Classification: B03

Contribution ID: 51

Type: **not specified**

D02-01 Hidden Photon Search at Tohoku and future

Tuesday, 7 March 2023 16:30 (5 minutes)

Presenter: KISHIMOTO, Yasuhiro (Kamioka Obs., ICRR, The University of Tokyo)

Session Classification: Short Talks for Open-Socilit Researches

Contribution ID: 52

Type: **not specified**

D02-02 Search for Dark Matter of Axion and Dark Photon at the LHC-ATLAS Experiment

Tuesday, 7 March 2023 16:35 (5 minutes)

Presenter: TANAKA, Junichi (Tokyo Univ.)

Session Classification: Short Talks for Open-Society Researches

Contribution ID: 53

Type: **not specified**

D02-03 DM mass from Cross correlating gamma ray with LSBG and IGM clustering

Tuesday, 7 March 2023 16:40 (5 minutes)

Presenter: NISHIZAWA, Atsushi (Nagoya Univ.)

Session Classification: Short Talks for Open-Socilit Researches

Contribution ID: 54

Type: **not specified**

D02-04 Search for New Physics in Electronic Recoil Data from XENONnT

Tuesday, 7 March 2023 16:45 (5 minutes)

Presenter: KAZAMA, Shingo (Nagoya Univ.)

Session Classification: Short Talks for Open-Socilit Researches

Contribution ID: 55

Type: **not specified**

D02-05 Study of assembly bias and splashback radius through multiwavelength data set and weak lensing

Tuesday, 7 March 2023 16:50 (5 minutes)

Presenter: MIYATAKE, Hironao (Nagoya Univ.)

Session Classification: Short Talks for Open-Socilit Researches

Contribution ID: 56

Type: **not specified**

D02-06 Development of spectrometer for WISP DM searches

Tuesday, 7 March 2023 16:55 (5 minutes)

Presenter: SUZUKI, Junya (Kyoto Univ.)

Session Classification: Short Talks for Open-Socilit Researches

Contribution ID: 57

Type: **not specified**

D03-01 -> separate talk on 8th

Tuesday, 7 March 2023 17:01 (1 minute)

Presenter: HAYASHI, Kohei (Institute for Cosmic Ray Research, The University of Tokyo)

Session Classification: Short Talks for Open-Social Researches

Contribution ID: 58

Type: **not specified**

D03-02 Probing the nature of dark matter in galaxy scales

Tuesday, 7 March 2023 17:02 (5 minutes)

Presenter: CHIBA, Masashi (Tohoku Univ.)

Session Classification: Short Talks for Open-Socilit Researches

Contribution ID: 59

Type: **not specified**

D03-03 The role of the dark matter in the statistics of active galactic nuclei (no talk)

Tuesday, 7 March 2023 17:07 (1 minute)

Presenter: OOGI, Taira (Ehime Univ.)

Session Classification: Short Talks for Open-Socilit Researches

Contribution ID: **60**

Type: **not specified**

D03-04 Astrophysical and Terrestrial Signals of Axion Stars

Tuesday, 7 March 2023 17:08 (5 minutes)

Presenter: EBY, Joshua (Univ. of Tokyo)

Session Classification: Short Talks for Open-Socilit Researches

Contribution ID: 61

Type: **not specified**

Refined relic abundance calculations for thermal and non-thermal Dark Matter

Tuesday, 7 March 2023 17:13 (5 minutes)

Presenter: BINDER, Tobias (TU Munich)

Session Classification: Short Talks for Open-Socilit Researches

Contribution ID: 62

Type: **not specified**

D03-06 Upper limit on the scalar field dark matter from LIGO third observation run

Tuesday, 7 March 2023 17:18 (5 minutes)

Presenter: SUYAMA, Teruaki (Research Center for the Early Universe, the University of Tokyo)

Session Classification: Short Talks for Open-Socilit Researches

Contribution ID: 63

Type: **not specified**

D03-08 -> separate talk on 8th

Tuesday, 7 March 2023 17:24 (5 minutes)

Presenter: NOUMI, Toshifumi (Kobe Univ.)

Session Classification: Short Talks for Open-Socilit Researches

Contribution ID: 64

Type: **not specified**

D03-09 Search for TeV-Range Dark Matter with Electron and Positron Cosmic Rays (zoom)

Tuesday, 7 March 2023 17:29 (5 minutes)

Presenter: MOTZ, Holger (Waseda Univ.)

Session Classification: Short Talks for Open-Socilit Researches

Contribution ID: 65

Type: **not specified**

D03-10 Validation of CDM cosmology for large-scale structure formation by considering cosmic variance

Tuesday, 7 March 2023 17:34 (5 minutes)

Presenter: MASAKI, Shogo (Suzuka Kosen)

Session Classification: Short Talks for Open-Socilit Researches

Contribution ID: 66

Type: **not specified**

D03-11 EBES (Electron Beam dump Experiment at SY3) to search for weakly interacting particles in MeV-GeV

Tuesday, 7 March 2023 17:39 (5 minutes)

Presenter: SAKAKI, Yasuhito (KEK)

Session Classification: Short Talks for Open-Socilit Researches

Contribution ID: 67

Type: **not specified**

D03-12 Jeans Equation Solver Using ML

Tuesday, 7 March 2023 17:44 (5 minutes)

Presenter: NOJIRI, Mihoko (KEK)

Session Classification: Short Talks for Open-Socilit Researches

Contribution ID: **68**

Type: **not specified**

D03-07 Radio bounds on the mixed dark matter scenarios of primordial black holes and WIMPs (no talk)

Tuesday, 7 March 2023 17:23 (1 minute)

Presenter: TASHIRO, Hiroyuki (Nagoya Univ.)

Session Classification: Short Talks for Open-Socilit Researches

Contribution ID: 69

Type: **not specified**

D02-07 -> separate talk on 9th

Tuesday, 7 March 2023 17:00 (1 minute)

Presenter: TSURU, Takeshi (Kyoto Univ.)

Session Classification: Short Talks for Open-Socilit Researches