Research Result Presentation Meeting of the ICRR Inter-University Research Program FY2023

II Synergies at new frontiers

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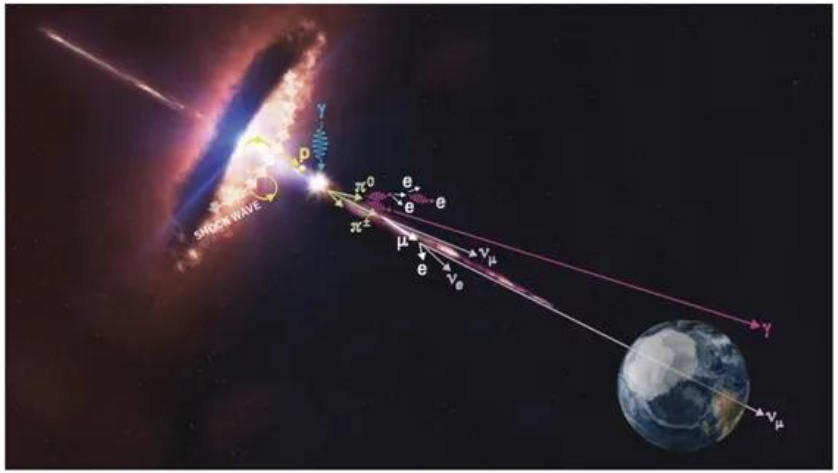
Participating Researchers: Masahiro Teshima (ICRR), Hideyuki Tagoshi (ICRR), Kyohei Kawaguchi (ICRR), Menjo Hiroaki (Nagoya University), Kimihiro Okumura (ICRR), Daniel Mazin (ICRR), Lluis Marti Magro (YNU), Hidetoshi Kubo (ICRR)

February 21th, 2024

Scientific rationale

Workshop series “**Synergies at new frontiers at gamma-rays, neutrinos and gravitational waves**”, which started in 2022 with the aim of

Strengthen cooperation and synergies between research in high-energy gamma rays, high-energy neutrinos, cosmic rays and gravitational waves



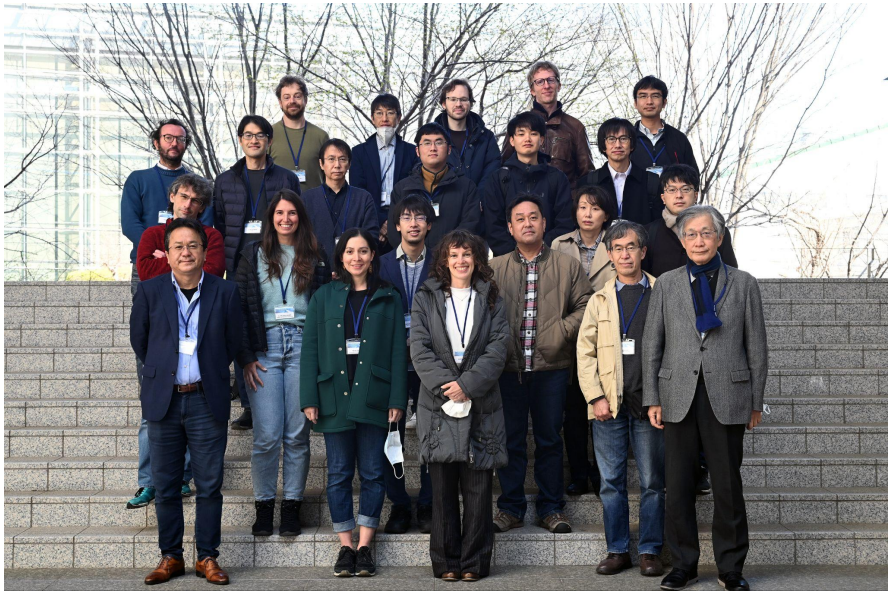
- Discoveries of HE cosmic neutrinos and GWs from astrophysical objects have led to the new era of MM astrophysics.
- Observatories and experiments are now more than ever able to observe the sky in different energy ranges and with different messengers.
- Each class of messengers -- **photons, neutrinos, CRs, and GWs** -- provides distinct and valuable information of the most violent phenomena in the Universe.

First edition

Explore potential synergies between different MM windows of the highly-energetic Universe using the following large experiments:

★ **CTA (LST1), CALET, MAGIC, KAGRA Super-Kamiokande** and **Hyper-Kamiokande.**

➔ **Budget** (340,000 JPY) spent for inviting speakers and hardware needed to set-up hybrid style meeting.



https://indico.icrr.u-tokyo.ac.jp/event/694/overview

★ **70 participants** (hybrid format: speakers onsite, audience online -due COVID restrictions-)

UTokyo Diversity&Inclusion

Second edition

This time the workshop will focus on the available ***alert systems*** which have been developed by the astrophysics community and on the results of multi-messenger sources.

➡ **2023i-F-008:** Approved budget FY2023: 400,000 JPY spent for inviting speakers.

Physics from MM sources:

- ❏ X-rays
- ❏ HE-VHE-UHE
- ❏ Gravitational Waves
- ❏ Neutrinos
- ❏ Optical
- ❏ Radio

Overview alert systems:

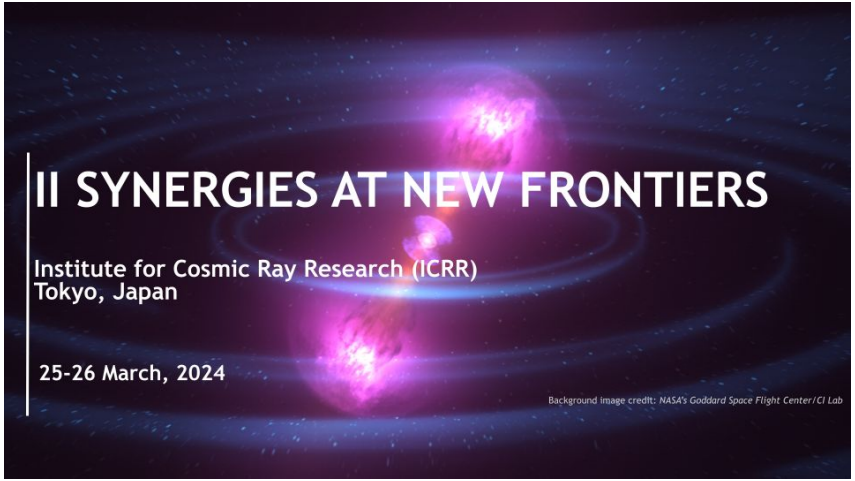
- ❏ Astro-colibrí
- ❏ GCN
- ❏ LVK
- ❏ HEIMDALL+WIT
- ❏ LSST
- ❏ ALMA+ICECUBE
- ❏ VLBI Network
- ❏ CALET alert system
- ❏ LHAASO

✚ MM program at the ICRR and IPMU

Second edition

Confirmed Speakers:

- Katsuaki Asano (ICRR)
- Kipp Cannon (The University of Tokyo, Research Center for the Early Universe)
- Jeffrey Adam Hodgson (Sejong University)
- Susumu Inoue (Chiba University)
- Kazumi Kashiyama (Tohoku University)
- Dmitry Khangulyan (ICRR)
- Yusuke Koshio (Okayama University)
- Lluis Martí-Magro (Yokohama National University)
- Masaki Mori (Ritsumeikan University)
- Soichiro Morisaki (ICRR)
- Koji Noda (Chiba University)
- Takanori Sakamoto (Aoyama Gakuin University)
- Fabian Schüssler (IRFU / CEA Paris-Saclay)
- Ataru Tanikawa (Fukui Prefectural University)
- Nozomu Tominaga (National Astronomical Observatory of Japan)
- Yuji Urata (National Central University)
- Mark Vagins (IPMU)
- Min Zha (Key Laboratory of Astroparticle and Cosmic Ray, Institute of High Energy Physics)



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Deadline abstract submission: **February 29**