

GCOS - ICRC contribution

- 12' pre-recorded video
- 8 pages proceedings contribution

GCOS Workshop May 2021

17-21 May 2021
zoom
Europe/Brussels timezone

- Overview
- Scientific Programme
- Timetable
- Registration
- Participant List**
- Signup to Email list
- GCOS homepage

Participant List

211 participants

First Name	~ Last Name	Affiliation
Rasha	Abbasi	Loyola university Chicago
James	Adams	UAHuntsville
Oscar	Adriani	University of Florence
Markus	Ahlers	Niels Bohr Institute

Deadline to upload material: 5 July!



- Overview
- Contribution List**
- Main Page
- Contact
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GCOS - The Global Cosmic Ray Observatory

📅 Not scheduled
🕒 12m
📍 ZOOM 02-09

Talk | CRI | Cosmic Ray In... | All contributions

Speaker

👤 Jörg Hörandel (Radboud University N...)

Description

Nature is providing particles with energies exceeding 100 EeV. Their existence imposes immediate questions: Are they ordinary particles, accelerated in extreme astrophysical environments, or are they annihilation or decay products of super-heavy dark matter or other exotic objects? If the particles are accelerated in extreme astrophysical environments, are their sources related to those of high-energy neutrinos, gamma rays, and/or gravitational waves, such as the recently observed mergers of compact objects? The particles can also be used to study physics processes at extreme energies; is Lorentz invariance still valid? Are the particles interacting according to the Standard Model or are there new physics processes? The particles can be used to study hadronic interactions (QCD) in the kinematic forward direction; what is the cross section of protons at $\sqrt{s} > 100$ TeV?

These questions are addressed at present by installations like the Telescope Array or the Pierre Auger Observatory. After the year 2030, a next-generation observatory will be needed to study the physics and properties of the highest-energy particles in Nature, building on the knowledge, harvested from the existing observatories. It should have an aperture at least an order of magnitude bigger than the existing observatories. We aim for a detector system with an area of 40000 square kilometers or more and all-sky coverage.

The physics case and possible scenarios for technical implementation of the Global Cosmic Ray Observatory - GCOS will be presented.

Keywords

cosmic rays; air showers; detector; future observatory; gamma-ray detector; neutrino detector; multi-messenger astroparticle physics

other Collaboration GCOS

Collaboration other (fill field below)

Subcategory Future projects

Primary author

👤 Jörg Hörandel (Radboud University N...)

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proposal:

form editorial board

(organizers of this workshop)

*Rafael Alves Batista, Antonella Castellina,
Ralph Engel, Toshihiro Fujii,
Jörg R. Hörandel (coordinator), Charles Jui,
Lu Lu, Ioana Maris, Shoichi Ogio, Takashi
Sako, Fred Sarazin*

—> write up summary of this workshop

==> proceedings

**—> identify topics and speakers for
video**

Who will be authors?

- ALL colleagues registered for this workshop?
- participants of the workshop can sign-in actively via web interface?

(2nd option is preferred:

- We can collect necessary information, like affiliation etc.
- Colleagues can decide if they want to sign the paper.)

**Co-authors will be invited to
give feedback on paper.**