EGI Council Participant: EnhanceR

Participating in EGI Impact Report: Switzerland

2023

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Infographic
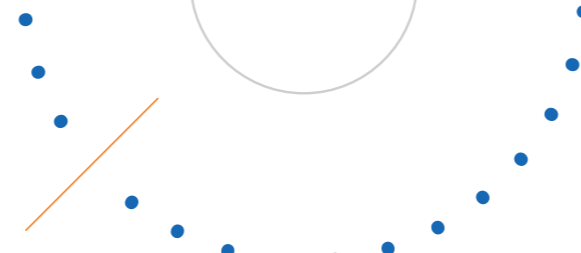
Country overview

+1,300 service users

In 2023, +1,300 researchers from Swiss institutions used the services provided by the EGI Federation

+560 publications

The research communities, projects and scientific collaborations from Switzerland supported by the EGI led to more than 580 peer-reviewed scientific publications
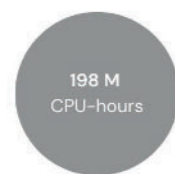
13 Supported communities

In 2023, the Swiss infrastructure supported 13 research communities in the following disciplines: Agriculture, Climate Research, Health and Medicine, Linguistics, Physics

Projects

Swiss partners participate in 11 collaboration projects + EGI-ACE and interTwin

198 M CPU-hours

5 HTC Data Centres

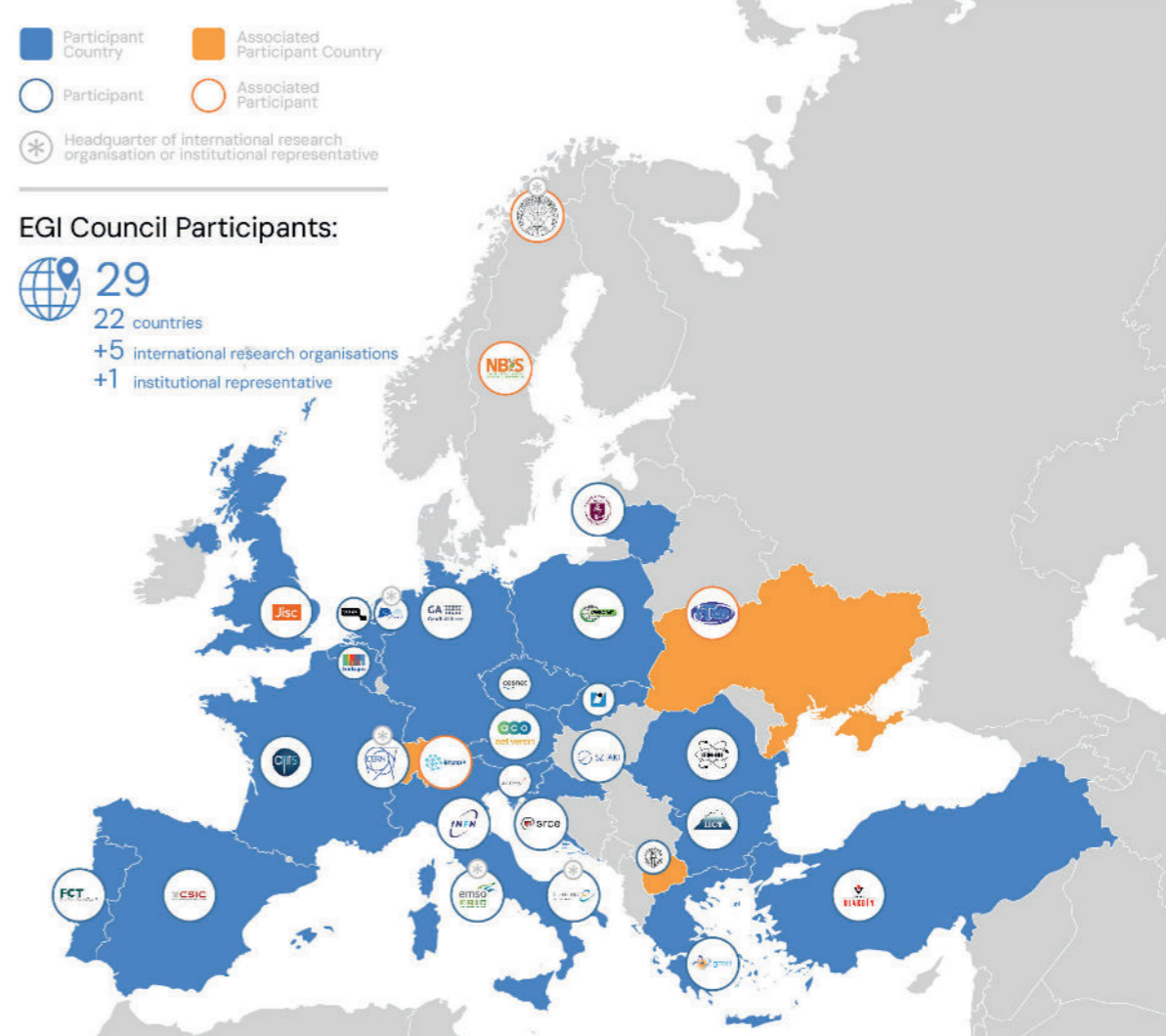|	
Number of supported publications	564
Number of total service users	1,332
Scientific Communities supported	13
Data Centres contributing to the Federation	5
Collaboration projects	11
Total CPU hours delivered	198,259,020
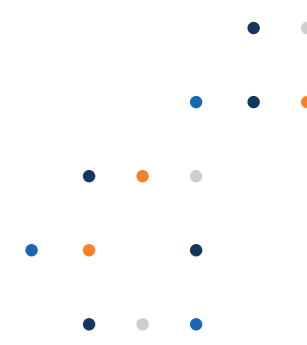
About EGI

EGI is the federation of computing and storage resource providers united by a mission of delivering advanced computing and data analytics services for research and innovation.

The EGI Federation believes that all researchers should have seamless access to services, resources and expertise to collaborate and conduct world-class research and innovation. The EGI Federation is coordinated by EGI Foundation, an organisation with headquarters in Amsterdam. The Foundation offers a service federation and management platform, enabling the data centres to harmonise and integrate their services by connecting to a common hub. Moreover, it engages with international research communities using these services in order to understand and satisfy their demands for advanced computing for research.

The mission of EGI is pursued by coordinating and provisioning an international federated infrastructure that pools together service providers from both the public and private sectors in Europe to develop, integrate and deliver digital services for compute and data-intensive research and innovation. As an open initiative with a global outlook, the EGI Federation also connects service providers beyond Europe, following the collaboration needs of the served communities.

The latest Annual Report provides an extensive overview of the results that have been achieved through our collaborative efforts in 2023.

EGI Council Participants:

29
22 countries
+5 international research organisations
+1 institutional representative

Approved EGI Council map from 2023

About EnhanceR

EnhanceR is a nationally and internationally recognized network for Swiss research IT expertise. It is an association according to Swiss law.

The association's goal is facilitating research excellence in Switzerland to ensure it maintains its leadership position. It achieves this goal by federating Research IT specialist groups at various academic institutions across Switzerland. It creates value by allocating its expertise where and when it is most needed, the interests of the community of users and support teams of scientifi c computing applications nationally and internationally.

EnhanceR builds on the foundation of the Swiss National Grid Association (SwiNG) and continues the national and international roles and mandates of the former association. It is the legal entity sustaining the outcomes of the completed swissuniversities EnhanceR project.

As of 2023, it counts 10 Swiss higher her education, infrastructure and research institutions as members. Membership is open according to its articles. EnhanceR is supported by Swissuniversities.

Overall EGI impact

The Swiss participation in the EGI Federation is coordinated by EnhanceR (Enhancing Research through IT Expertise), the nationally and internationally recognized network for Swiss research IT expertise. This report provides an overview of the activities of EnhanceR in EGI, and the impact that was achieved thanks to this participation. The annual membership fee contributed by EnhanceR to the EGI Foundation in 2023 was 27,500 EUR.

The EGI Federation is composed of e–infrastructure providers from national and community initiatives, forming one of the largest distributed computing infrastructures for researchers in the world, integrating about 1,243,400 CPU cores and over 1,4 Exabyte of storage space from hundreds of data centres.

In 2023, the EGI Federation served around 95,000 users (+12%) from over 260 research communities. EGI users consumed 7 Billion HTC CPU hours (–1.04%), 12 Million Cloud CPU hours +17%), ran over 372 M computational jobs (+13.4%) and published over 2,900 open access publications.

As of the previous year, the research community with the largest number of users is Medical and Health Sciences (+43% annual increase in 2023), while the community with most extensive HTC CPU/h consumption is WLCG.

From the scientific communities engaged in 2023, the one with most extensive Cloud CPU/h consumption is Pangeo (+2959% annual increase in 2023).

Moreover, EGI engaged with a total of 265 scientific communities (10 new communities); 19 SMEs and business pilots, and 1 additional Research Infrastructure included in the ESFRI Roadmap, raising the total of number of ESFRI partners/users of EGI to 23.

EGI contribution to Swiss excellence in science

Research Infrastructures and multi-national research collaborations are the largest adopters of EGI Services, the main contributors of thematic portals, and operate community-specific compute, storage and data systems based on EGI federation capabilities.

The services of the EGI federation have been used by 1332 researchers from Switzerland in 2023. The estimated annual scientific output in 2023 produced by research communities, projects and scientific collaborations from Switzerlandand supported by the EGI Federation is estimated to amount to more than 560 peer reviewed scientific publications.

The EGI Federation is currently working with over 40 Research Infrastructures, 13 of which include Swiss partners. These EGI-enabled research infrastructures, their Swiss members and their 2023 scientific output (publications) are detailed in the following pages of the report

Swiss research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2023

ATLAS (High-Energy Physics)
- Albert Einstein Center for Fundamental Physics and Laboratory for High Energy Physics, University of Bern
- Département de Physique Nucléaire et Corpusculaire, Université de Genève,
- CERN

ATLAS has been supported since 2012 as part of the EGI WLCG collaboration, formally agreed in an MoU. Federated services delivered in the context of the WLCG MoU, including:

- Software support (consultancy to users and system administrators, (software maintenance and validation)
- Infrastructure and operations Services (infrastructure catalogue, accounting repository and portal, helpdesk, monitoring, operations portal, AAI)
- Software distribution services (UMC, CMD, operations documentation)
- Operations coordination (middleware deployment campaigns, procedures, innovation of tools)
- Security services and activities (CSIRT, Software vulnerability group, international security coordination, policies, IGTF distribution)
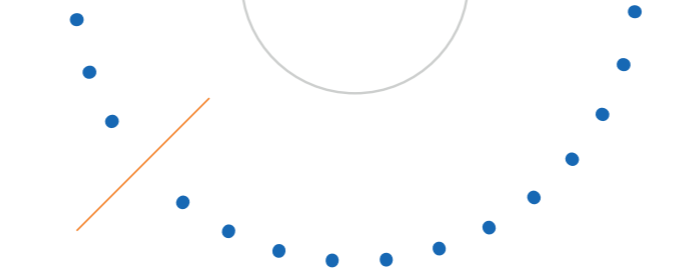
111

CMS (High-Enery Physics)
- Paul Scherrer Institut
- ETH Zurich Institute for Particle Physics and Astrophysics (IPA)
- Universität Zürich

CMS has been supported since 2012 as part of the EGI WLCG collaboration, formally agreed in an MoU. Federated services delivered in the context of the WLCG MoU, including:

- Software support (consultancy to users and system administrators, (software maintenance and validation)
- Infrastructure and operations Services (infrastructure catalogue, accounting repository and portal, helpdesk, monitoring, operations portal, AAI)
- Software distribution services (UMC, CMD, operations documentation)
- Operations coordination (middleware deployment campaigns, procedures, innovation of tools)
- Security services and activities (CSIRT, Software vulnerability group, international security coordination, policies, IGTF distribution)

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Swiss research collaborations in EGI	EGI supported activities and services	Number of scientific papers published in 2023
CTA (Astronomy) • ETH Zurich, Institute for Particle Physics • ISDC Data Centre for Astrophysics • Observatory of Geneva • University of Geneva • Universität Zürich	The CTA experiment has been using compute resources from EGI partners for more than a decade. The services from the EGI federation that CTA uses include: • EGI HTC services from 9 EGI participant countries (CZ, DE, IT, FR, ES, NL, RO, PT, SI) • Software distribution services (UMC, CMD, operations documentation) • Operations coordination (middleware deployment campaigns, procedures, innovation of tools) • Security services and activities (CSIRT, Software vulnerability group, international security coordination, policies, IGTF distribution)	**0**
DUNE (Astroparticle Physics) • Eidgenössische Technische Hochschule Zürich (ETH Zürich) • Universität Basel (University of Basel) • Albert Einstein Center for Fundamental Physics and Laboratory for High Energy Physics, University of Bern	The DUNE experiment has been using compute resources from EGI partners for more than a decade. The services from the EGI federation that DUNE uses include: • EGI HTC services from 6 EGI participant countries (CH, CZ, ES, FR, NL, UK) • Software distribution services (UMC, CMD, operations documentation) • Operations coordination (middleware deployment campaigns, procedures, innovation of tools) • Security services and activities (CSIRT, Software vulnerability group, international security coordination, policies, IGTF distribution)	**20**
EMPHASIS (Agriculture) • Agroscope • University of Bern • University of Zürich • ETH • University of Lausanne • University of Geneve	EMPHASIS has been supported through the establishment of a Data Space in the EGI-ACE project. Since 2017 EMPHASIS using the following services from EGI: • EGI Check-in • EGI Cloud Compute • EGI Online Storage • EGI DataHub • Technical support • Software integration and piloting	**0**

Swiss research collaborations in EGI	EGI supported activities and services	Number of scientific papers published in 2023
IceCube (Neutrino Observatory) • Université de Genève	The IceCube experiment has been using compute resources from EGI partners for more than a decade. The services from the EGI federation that IceCube uses include: • EGI HTC services from 8 sites of 4 EGI participant countries (Belgium, Denmark, Germany and UK) • Software distribution services (UMC, CMD, operations documentation) • Operations coordination (middleware deployment campaigns, procedures, innovation of tools) • Security services and activities (CSIRT, Software vulnerability group, international security coordination, policies, IGTF distribution) • EGI is currently expanding its resource pledge to IceCube with an increase of GPU capacity.	**20**
ILC (High-Energy Physics) • ETH Zurich, Institute for Particle Physics (IPP), Zurich • ETH Zurich, Institute for Theoretical Physics (ITP), Zurich	The ILC experiment has been using compute resources from EGI partners since 2004. The services from the EGI federation that ILC experiments uses include: • EGI HTC services from 27 EGI federated sites from IL, DE, FR, ES, NL, PL, UK • Software distribution services (UMC, CMD, operations documentation) • Operations coordination (middleware deployment campaigns, procedures, innovation of tools) • Security services and activities (CSIRT, Software vulnerability group, international security coordination, policies, IGTF distribution)	**43**

Swiss research collaborations in EGI	EGI supported activities and services	Number of scientific papers published in 2023
LHcB (High-Energy Physics) • Lausanne, EPFL • Zürich, Univ.	LHCb has been supported since 2012 as part of the EGI WLCG collaboration, formally agreed in an MoU. Federating services delivered in the context of the WLCG MoU, including: • Software support (consultancy to users and system administrators, (software maintenance and validation) • Infrastructure and operations Services (infrastructure catalogue, accounting repository and portal, helpdesk, monitoring, operations portal, AAI) • Software distribution services (UMC, CMD, operations documentation) • Operations coordination (middleware deployment campaigns, procedures, innovation of tools) • Security services and activities (CSIRT, Software vulnerability group, international security coordination, policies, IGTF distribution)	**44**
LSST (Astronomy) • Eidgenoessische Technische Hochschule Zuerich (ETH Zurich), Institute for Astronomy	The LSST survey federates High Throughput Compute (HTC) resources from France and the UK and run an analysis campaign in 2020 to prepare for the opening of the Vera C. Rubin Observatory. The campaign consumed over 11 million CPU-hour in 2020 to analyse generated images, imitating the telescope images that are expected to become available from 2023. The LSST compute federation benefited from the following EGI services: • Software support (consultancy to users and system administrators, (software maintenance and validation) • Infrastructure and operations Services (infrastructure catalogue, accounting repository and portal, helpdesk, monitoring, operations portal, AAI) • Software distribution services (UMC, CMD, operations documentation) • Operations coordination (middleware deployment campaigns, procedures, innovation of tools) • Security services and activities (CSIRT, Software vulnerability group, international security coordination, policies, IGTF distribution)	**11**

| Swiss research collaborations in EGI	EGI supported activities and services	Number of scientific papers published in 2023
SKA (Radioastronomy) • École polytechnique fédérale de Lausanne	LOFAR has been supported by EGI partners in the EOSChub project in the setup and validation of a data access and transformation workfl ow on High Throughput Compute (HTC) resources. Since 2021 LOFAR (represented by ASTRON) participates in the EGI-ACE Horizon 2020 project where SURF (EGI member from NL) supports the setup, operation and promotion of the LOFAR Data Space, an online service that produces and make 'LOFAR science ready data' available in EOSC for broad uptake. The setup will rely on EGI HTC, Check-in, Helpdesk and consultancy/ technical support services.	**55**
WeNMR (Structural Biology) • FRIEDRICH MIESCHER INSTITUTE FOR BIOMEDICAL RESEARCH • UNIVERSITY OF ZURICH • ETH ZÜRICH • UNIVERSITY OF FRIBUORG • EPFL • UNIVERSITÉ DE GENÈVE • UNIVERSITY OF BERN • UNIVERSITY OF LAUSANNE • PAUL SCHERRER INSTITUTE • ZHAW School of Life Sciences and Facility Management • University of Basel	WeNMR is supported by EGI since 2011 and has a Service Level Agreement since 2016. The EGI Services used by the community include: • High-Throughput, Cloud + Online Storage services from 23 EGI federated sites from the Netherlands, Italy, France, Germany, UK, Poland, the Asia Pacific region, IberGrid (Spain and Portugal), Italy, the Latin America region. • EGI Workload Manager • Trust and identity management with Check-in • Technical support: WeNMR benefited from continual support through dedicated support activities in various EGI flagship projects: EGI-Engage, EOSC-hub and EGI-ACE.	**148**
XENON (Dark Matter Physics) • Univ. of Zurich	The XENON experiment has been using compute resources from EGI partners for more than a decade. The services from the EGI federation that XENON uses include: • EGI HTC services from 4 EGI federated sites from France, Italy, the Netherlands and Israel • Software distribution services (UMC, CMD, operations documentation) • Operations coordination (middleware deployment campaigns, procedures, innovation of tools) • Security services and activities (CSIRT, Software vulnerability group, international security coordination, policies, IGTF distribution)	**7**
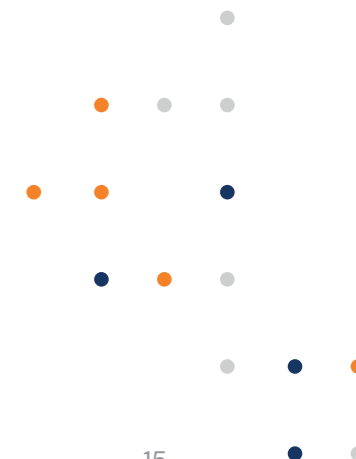
Participated projects

The EGI Foundation coordinated one Horizon 2020 projects, EGI ACE (January 2021-June 2023). Moreover, it leads two Horizon Europe Projects, iMagine (September 2022-December 2025) and interTwin (September 2022-August 2025).

Furthermore, the EGI Federation was involved in 8 additional projects, increasing the innovation potential of its participants.

The EGI Federation participates in Horizon 2020 and Horizon Europe projects together with Swiss institutions to facilitate the uptake and use of e-infrastructure services for science. A summary of these projects, the involved institutes and the scope of the collaboration is provided in the next table.

Project title	Scope of collaboration	Participating beneficiaries from the country
DIGITBRAIN	EGI leads the processes related to setup and operate of testbed infrastructure, the Edge/cloud/ HPC orchestration, to secure resource access and user management. It also works on the commercial exploitation and sustainability plan and on dissemination activities.	• Scuola Universitaria Professionale Della Svizzera Italiana
co-eosc Blue Cloud2026	EGI contributes to EOSC-LIFE by supporting the creation and operation of a life science AAI (LS AAI) that is fully interoperable with the EOSC AAI.	• EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH
SOBIGDATA	EGI leads the work on Services Provision, which collects information about the services that the RI can provide and creates a plan for a unified single access point RI, including access policies for the distributed resources. EGI also contributes to the development of the financial aspect of the future RI, defines the business cases and the cost book, supports the strategy and enhance the impact of the RI, contributes to the Dissemination and Communication plans (WP5), and to the creation of the Italian central Hub for the preparation phase.	• MEOH • Open Access In The European Area Through Scholarly Communication
SoBigData	EGI is one of the main contributors to the design and definition of the EOSC architecture and the federated service management framework, and coordinates service pilots participates by the scientific demonstrators. EGI also contributed to the definition of the governance framework and to the works on Rules of Participation. In the project EGI will enhance the SoBigData platform with two services: Jupyter Notebooks and the Workflow manager Galaxy	• ETH – Eidgenössische Technische Hochschule Zürich
co eosc | EuroScienceGateway	In the project, EGI will develop a workflow-based Gateway to computing and storage infrastructures and services for European scientists, contributing an innovative and customizable service for EOSC that enables operational open and FAIR data and data processing.	• VIB VZW Ecole Polytechnique Federale de Lausanne

Project title	Scope of collaboration	Participating beneficiaries from the country
EOSC Future	EGI contributed to the design, operation and interoperability of EOSC Core services, to running the EOSC Digital Innovation Hub, as well as to resource strategy and the processes for onboarding new groups to EOSC. EGI was responsible for requirements collection and analysis for both the EOSC Back Office and Front Office. It also leads all operational aspects of the EOSC Portal. Finally, EGI played a leading role in developing the EOSC SMS.	• PAUL SCHERRER INSTITUT
PHENET	In the project, EGI co-designs and deploys AI models on edge resources, enhancing capacity through its federation's computational and storage resources. EGI expands resource allocations, provides a two-tier e-infrastructure for validation and large-scale data processing, and ensures sustainable setups by coordinating national funding. EGI addresses data management challenges, integrates distributed storage solutions, and connects PHENET with the European Open Science Cloud.	• Eidgenoessische Technische Hochschule Zuerich • Eidgenoessisches Departement fuer Wirtschaft, Bildung und Forschung
CRAFT·OA eosc	EGI coordinates the task dedicated to the Single Sign-On access with the EGI Check-in service.	• UNIVERSITAET BERN

Infrastructure contributions

The EGI Federation offers two complementary compute capabilities: the High-Throughput Compute (HTC) federation and the Cloud federation. 5 Swiss data centres contribute to these federations:

- CSCS-LCG2 (CSCS, Swiss National Supercomputing Centre)
- T3_CH_PSI (HPCE Group, NES/LSM, Paul Scherrer Institut, CH–5232 Villigen PSI, CH)
- UNIGE-DPNC (Grid computing cluster of the DPNC department at the University of Geneva)
- UNIBE-ID (HPC cluster of the IT Services Office at the University of Bern)
- UNIBE-LHEP (Grid computing cluster of the LHEP department at the University of Bern)

The data centres provided 17 service endpoints and delivered 198,259,020 CPUhours in total to EGI communities in 2023. The data centres responded to 66 support tickets through the EGI Helpdesk. The most active international user groups of the Swiss compute resources were:

- ATLAS 75.24%
- CMS 19.73%
- LHCB 4.88%
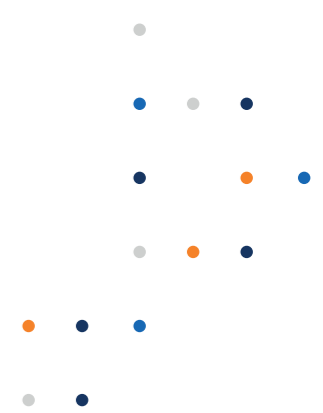
Methodology

Data for this impact report has been collected from the following sources.

- Infrastructure contributions, infrastructure usage by research communities: EGI Accounting System
- List of research publications by supported research communities (table 1)

AMS-02
https://ams02.space/publications

ILC
https://inspirehep.net/literature?sort=mostrecent&size=25&page=1&q=international%20Linear%20Collider%20&earliest_date=2021--2021

ALICE
https://alice-publications.web.cern.ch/publications

INSTRUCT
https://instruct-eric.eu/content/publications-list

ATLAS
https://cds.cern.ch/collection/ATLAS%20Papers?ln=en

JUNO
https://inspirehep.net/

AUGER
https://www.auger.org/science/publications/journal-articles

KM3NET
https://www.km3net.org/about-km3net/publications/pubblication/; https://inspirehep.net/literature?q=collaboration:KM3NeT year:2021

BELLE
https://belle.kek.jp/belle/publications.html; https://inspirehep.net/literature?q=collaboration:belle year:2021

LifeWatch
https://www.lifewatch.eu/catalogue-of-virtual-labs/medobis/publications/

BIOMED
https://vip.creatis.insa-lyon.fr/documentation/

LOFAR
http://old.astron.nl/radio-observatory/lofar-science/lofar-papers/lofar-papers; https://lofar-surveys.org/publications.html, or https://ui.adsabs.harvard.edu/search/q=full%3A(%22designed%20and%20constructed%20by%20ASTRON%22)%20OR%20title%3A%22LOFAR%22%20year%3A2021-2021%20property%3Arefereed%20-bibstem%3A(%22AN%22%20OR%20%22MNRAS.tmp%22)&sort=date%20desc%2C%20bibcode%20desc&p_=0

CTA
https://www.cta-observatory.org/science/library/

LCHb
https://cds.cern.ch/collection/LHCb%20Papers?ln=en

CLARIN
https://beta.clarin.openaire.eu/search/advanced/research-outcomes?sortBy=resultdateofacceptance,descending&type=publications&year=range2021:2021

LSST
https://ui.adsabs.harvard.edu/ with year:2021 author:("LSST*" OR "Vera C. Rubin*") collection:astronomy property:refereed

CMS
http://cms-results.web.cern.ch/cms-results/public-results/publications/CMS/index.html

NA62
https://cds.cern.ch/collection/NA62%20Papers?ln=en

DUNE
https://inspirehep.net/literature?q=collaboration:DUNE year:2021

OPENCOASTS
http://opencoasts.lnec.pt/index_en.php

EISCAT_3D
https://eiscat.se/scientist/publications/

PANOSC
https://www.panosc.eu/publications/

ELI-BEAM
https://www.eli-beams.eu/publikace/

SeaDataNet
https://www.seadatanet.org/Publications/Scientific-publications

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ELI-NP
https://www.eli-np.ro/scientific_papers.php

SKA
https://ui.adsabs.harvard.edu/search/fq=%7B!type%3Daqp%20v%3D%24fq_database%7D&fq_database=database%3A%20astronomy&q=pubdate%3A%5B2021-01%20TO%202021-12%5D%20title%3A(SKA)&sort=date%20desc%2C%20bibcode%20desc&p_=0

EMSO-ERIC
from the community representative; SLA https://documents.egi.eu/document/3539

SNO+
https://snoplus.phy.queensu.ca/results/collaboration-papers.html

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FUSION
https://documents.egi.eu/public/ShowDocument?docid=3484

VIRGO
https://pnp.ligo.org/ppcomm/Papers.html

HESS
https://www.mpi-hd.mpg.de/hfm/HESS/pages/publications/

WeNMR
https://explore.openaire.eu/ advanced search project outcomes. field to search "project" enter project name; Citation of HADDOCK web server: https://scholar.google.nl/scholar?hl=en&as_sdt=2005&cites=10355645612647046441&scipsc=&as_ylo=2021&as_yhi=2021; Citations of the AMBER web portal publication: https://scholar.google.com/scholar?as_ylo=2021&hl=en&as_sdt=0,5&sciodt=0,5&cites=6696812766870837905&scipsc=; Citations of the FANTEN web portal publication: https://scholar.google.com/scholar?as_ylo=2021&hl=en&as_sdt=0,5&sciodt=0,5&cites=10578718345045994565&scipsc=; Citations of the DISVIS/POWERFIT web portals publication: https://scholar.google.com/scholar?as_ylo=2005&cites=6482114501244947208&scipsc='; Citations of the SpotON web portal: https://scholar.google.com/scholar?as_ylo=2021&hl=en&as_

Ice-Cube
https://icecube.wisc.edu/science/publications/

XENON
https://inspirehep.net/literature?q=collaboration:XENON year:2021

National institutional members of supported research communities (table 2)

AMS-02
https://ams02.space/collaboration/institute

ILC
https://linearcollider.org/team/

ALICE
https://alice-collaboration.web.cern.ch/General/Members/List_Institutes.html

INSTRUCT
https://instruct-eric.eu/countries

ATLAS
https://atlas.cern/discover/collaboration

JUNO
https://juno.ihep.ac.cn/collaboration.php

AUGER
https://www.auger.org/collaboration/institutions, https://www.auger.org/collaboration/funding-agencies

KM3NET
https://www.km3net.org/about-km3net/collaboration/members/

BELLE
https://belle.kek.jp/bdocs/collaboration.html

LifeWatch
https://www.lifewatch.eu/organisation-governance/

BIOMED
https://vip.creatis.insa-lyon.fr/

LOFAR
https://www.astron.nl/telescopes/

CTA
https://www.cta-observatory.org/about/cta-consortium/

LCHb
https://lhcb-public.web.cern.ch/en/collaboration/Collaboration-en.html

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CLARIN
https://www.clarin.eu/content/participating-consortia

LSST
https://www.lsstcorporation.org/international-contributors

CMS
https://cms.cern/collaboration/cms-institutes

NA62
https://greybook.cern.ch/experiment/detail?id=NA62

DUNE
https://lbnf-dune.fnal.gov/about/countries-and-institutions-participating-in-dune/

OPENCOASTS
http://opencoasts.lnec.pt/index_en.php

EISCAT_3D
https://eiscat.se/wp-content/uploads/2016/12/EISCAT-Organogram-202x.jpg; https://eiscat.se/scientist/document/information/

PANOSC
https://www.panosc.eu/partners/

ELI-BEAM
https://www.eli-beams.eu/about/cooperation/science/

SeaDataNet
https://www.seadatanet.org/About-us/SeaDataNet-AISBL/Members

ELI-NP
https://www.eli-np.ro/scientific_collaborations.php

SKA
https://www.skatelescope.org/participating-countries/

EMSO-ERIC
http://emso.eu/organization/

SNO+
https://snoplus.phy.queensu.ca/collaboration.html

FUSION
https://documents.egi.eu/public/ShowDocument?docid=3484

VIRGO
https://apps.virgo-gw.eu/vmd/public/institutions

HESS
https://www.mpi-hd.mpg.de/hfm/HESS/pages/collaboration/

WeNMR
https://documents.egi.eu/document/2751

Ice-Cube
https://icecube.wisc.edu/collaboration/institutions/

XENON
https://science.purdue.edu/xenon1t/?page_id=27

EGI Membership Impact Report

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