SISSA Policy on Open Science

issued by Director's Decree n. 154 February 28th 2025

Art. 1 - General Principles

The Open Science movement was born to promote the sharing and dissemination of scientific knowledge through open access to research results.

Since the beginning, SISSA has supported the implementation of the open access principle. It played a pioneering role in 1992, following the example of the Los Alamos laboratories and through mutual "mirroring," in the creation of the first electronic archives. It founded the *JHEP* journal, the world's first electronic journal managed by the scientific community on a non-profit basis, and one of the first open access journals in physics. In 2004, it signed the Messina Declaration following the "Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities" of October 2003. Over the years, SISSA has created several institutional open-access repositories for theses, research outputs, grey literature, and research data.

In line with the UNESCO Recommendation and the Italian National Plan for Open Science (PNSA), SISSA therefore promotes the principles of open access to scientific literature and the free dissemination of research results produced within the School, as well as the adoption of open science practices in research for the benefit of the entire scientific community and society at large.

Art. 2 - Areas of Application

This policy applies to all institutional users of SISSA, meaning all those who have an official affiliation with SISSA. It defines the framework within which any future agreement concerning publications and research data with third parties should be established.

Art. 3 - Definitions

For the purposes of this policy, the following definitions apply:

a) **"scientific literature contribution" or "product"**: any text (possibly accompanied by images and/or scientific data related to the text) accepted or published in scientifically relevant editorial venues and subject to peer review. Examples include essays, journal articles, conference proceedings, monographs with ISBN, book chapters, doctoral theses, databases, critical or scientific editions;

b) **"SISSA author"**: any member affiliated with SISSA in any capacity, such as professors, research staff, Ph.D. students, research fellows, technical-administrative staff, as well as personnel contracted by SISSA, who are authors or co-authors of original works of scientific literature;

c) **"open access"**: the publication of a scientific literature contribution accompanied by the free, irrevocable, and universal granting of the right to access, distribute, transmit, and publicly display it, and, where applicable, the right to create and distribute derivative works in any format for any responsible purpose, subject to the proper attribution of intellectual property;

d) **"institutional repository"**: a digital archive interoperable with international standard protocols, ensuring the preservation and public access to the deposited "products" and the free dissemination/distribution of metadata;

e) **"publisher's digital version"**: the digital version of the product as published by the publisher ("publisher's version" and/or "version of record");

f) **"final peer-reviewed digital version" (also "post-print" or "author accepted manuscript")**: the final digital version of the product, accepted by the publisher, incorporating the peer-review process results but not yet formatted by the publisher and without logos or trademarks;

g) **"non-peer-reviewed digital version" ("pre-print")**: the early digital version of the product before peer review;

h) **"bibliographic metadata"**: descriptive and structural information (or data about data) - data and associated files - including contextual information (e.g., administrative and management details) about a scientific literature contribution. These metadata are owned by SISSA, can be used for bibliographic exchange, and are not subject to copyright protection;

i) **"embargo"**: a period of time during which the deposited contribution is publicly accessible only in terms of metadata, while the full content remains restricted and accessible only for evaluation purposes;

j) **"grey literature"**: literature not subject to peer review, including technical and research reports, statistical reports, feasibility studies, interviews, newsletters, research projects, guidelines for analytical methods and laboratory techniques, and pre-prints intended for future publication;

k) **"research data"**: digital documents, distinct from scientific publications, collected or produced during scientific research and used as evidence in the research process or commonly accepted within the research community as necessary to validate conclusions and findings. Examples include statistics, experimental results, measurements, field observations, survey results, images and interview recordings, along with metadata, specifications, and other digital objects;

l) **"research information"**: supplementary information related to the entire research process, from the conduction to the communication. This includes, but is not limited to, bibliographic metadata such as titles, abstracts, bibliographies, author and affiliation data, data on publication venues, research software metadata, research data, samples and instruments, funding and grant information, and details on research organizations and collaborators; research information can be found in bibliographic databases, software repositories, data archives, and current research information systems;

m) **"FAIR data"** (Findable, Accessible, Interoperable, and Reusable): research data and metadata that comply with principles ensuring findability (by machines and humans), accessibility (through an online resource with a persistent identifier), interoperability (using standard and open protocols to allow combination with other data/tools and assuring the compliance with recognized formats/standards), and reusability (with proper documentation for correct interpretation, replication, or combination in different contexts, and a clear license defining allowed reuse);

n) **"Data Management Plan" (DMP)**: a document describing the entire lifecycle of research data, subject to updates. The DMP outlines how research data will be collected, stored, and shared according to FAIR principles, ensuring secure and efficient data management while complying with regulations and best practices. In some funding programs the DMP is a required project outcome.

Art. 4 - Open Access

SISSA promotes the publication of research results in high-quality scientific journals with open access, in its various forms, such as subscribing to transformative agreements, participating in “S2O” programs, or engaging in open publishing projects.

SISSA also encourages, where permitted and in compliance with regulations, particularly regarding intellectual property, confidentiality, and personal data protection, the so-called “green road,” meaning self-archiving by authors of scientific contributions and related data and metadata on open archives independent of the publisher's platform, with a free, irrevocable, and universal license.

Art. 5 - Institutional Repositories

SISSA uses several institutional repositories for the preservation of scientific research outputs, grey literature, and research data of the School. At the time of the publication of these guidelines, the following repositories are available:

- SISSA IRIS (Theses and Peer-reviewed Articles)
- SISSA Open Science (Lectures, Grey Literature, Conference Proceedings)
- SISSA Open Data (Research Data)

Art. 6 - Deposit and Publication in the SISSA IRIS Institutional Repository

The SISSA IRIS Institutional Repository aims to collect the scientific research outputs of the School through the IRIS portal ("Institutional Research Information System").

This tool fulfills the task of archiving the products of SISSA authors in compliance with national and international regulations, the directives of research funders and the ANVUR requirements.

The repository:

- has advanced functionalities for recording, certifying, disseminating, and preserving contributions over time;
- is interoperable with ministerial and bibliographic databases; it is indexed by the main general and specialized search engines, ensuring maximum dissemination and visibility of the deposited products.

SISSA authors are required to start the archiving procedure in the SISSA IRIS portal when they are notified of the publication of their work by a journal or other publishing entity, or of its acceptance by the publisher.

Where possible and in accordance with copyright regulations, editorial policies, requests from funding bodies, and European Union directives, the work will be made available in open access.

By depositing his/her products in the institutional repository, the author grants SISSA permission to disseminate the metadata, to retain a digital copy of the contribution in the version authorized by the publisher for long-term preservation, and for the aforementioned evaluation procedures.

If SISSA holds the copyright for the product, the author shall immediately, upon acceptance of the contribution, publish it in open access in the SISSA IRIS portal, except in the case of any incompatibility with other rights and procedures.

Art. 7 - Deposit and Publication in the Open Science Institutional Archive

SISSA recognizes the need to share publications not subject to peer review, lectures, reports, or other materials. To this purpose, it provides its community with the institutional archive named Open Science.

Art. 8 - Deposit and Publication in the Open Data Institutional Archive - Data Policy

SISSA provides the Open Data institutional archive to offer a tool for depositing research data related to SISSA projects, adhering to the highest standards in data collection, archiving, accessibility, sharing, and preservation, ensuring quality and integrity in compliance with FAIR principles.

It is the responsibility of the scientific staff:

- to collect, document, archive, use, access, and preserve (or destroy) research data, including the definition of protocols and responsibilities within the project group, which

should be included in a Data Management Plan compiled at the early stage of the research work;

- to develop and update the Data Management Plan, as indicated in the Data Management Plan Template;
- to devise the use of research data even after the conclusion of the project, including the definition of reuse rights;
- to create backup copies, in compliance with institutional, legal, and/or contractual guidelines and requirements regarding research data and the management of all related information (including metadata);
- to determine which data should be preserved, also considering obligations arising from contracts with third parties;

It is the responsibility of SISSA to offer support to the scientific staff through infrastructures that support open and transparent research, in accordance with European directives and national and international regulations. More specifically:

- to provide a general template for the Data Management Plan;
- to assist researchers in designing and filling out Data Management Plans;
- to develop services and ensure procedures for project registration, research data deposit, archiving, and preservation for current and future access, during and after the research;
- to provide access to services and infrastructures necessary for researchers to carry out activities related to their responsibilities and, if needed, fulfill obligations specified in contracts with research funders or other organizations.

Research data related to SISSA projects are deposited in the institutional archive (or other appropriate and reliable thematic archives). When research is funded by third parties and/or specific agreements exist concerning data management, such agreements take precedence over these guidelines.

The archive allows, if necessary and compatible with the requirements of funding bodies, to make initially only metadata public and, later, the full data, stating the duration of the embargo period and, if applicable, the procedures for requesting access to the data.

Research data should be preserved for a minimum period of 10 years from the public release of the results of a project, unless other requests are made by the funding body.

The deletion or destruction of research data (after the end of the archiving period or for ethical or legal reasons) must consider the reasons for their possible conservation.

If, after considering the ethical and legal reasons for their preservation, the deletion or destruction of research data becomes necessary, this must be traceable, and the related documentation must be made accessible. Also to be considered are the interests of any third-party research funders and/or other stakeholders, as well as any aspects of confidentiality and security.

Art. 9 - Management of Copyright and Privacy

It is the responsibility of the author who uploads a product/document to one of the School's repositories to ensure in advance that this upload does not violate any rights arising from private agreements signed with third parties, nor does it violate Italian and international laws regarding copyright and/or privacy.

SISSA provides support to authors in managing copyright for the purpose of open access in the institutional repository. To this end, SISSA suggests contract models and specific addenda in line with the European Commission's recommendations and guidelines for managing and negotiating copyright with publishers.

Authors are invited to always be aware of which rights they are transferring to the publisher and, when negotiating copyright with the publisher, to reserve the right to make their contribution available in open access, especially if this is a requirement of the funding agency.

Authors are encouraged to publish their products in the institutional repository, accompanying them, where possible, with a license aligned with the 2003 Berlin Declaration, such as the Creative Commons CC BY license, which grants the author the sole right of attribution.

Art. 10 - Doctoral and Master Theses

The scheme provided by this policy for the deposit and publication of research outputs also applies to doctoral theses and master theses, fulfilling the legal deposit obligation with the National Libraries of Rome and Florence. The deposit is governed by a specific regulation.

Art. 11 - Research Committee for Open Access/Open Science

The Research Committee, integrated with the Library, ITCS, and Valorization and Innovation offices for this occasion, is tasked with making proposals and/or discussing issues related to Open Science.

Art. 12 - Implementation, Management, and Monitoring of the Policy

SISSA is committed to:

- providing users with appropriate training on Open Science best practices;
- offering consultation and support regarding procedures for depositing products in the institutional repositories, copyright laws, and privacy protection;
- ensuring adequate interoperability and indexing on broader portals and databases;
- providing resources, tools, and infrastructure for data preservation;
- providing services to ensure current and future access, during and after the completion of the research project;
- offering assistance and advice to authors to comply with the requirements of this policy and the funding agencies;
- periodically monitoring the implementation of this policy, both regarding the deposit and publication in the institutional repositories and open access publications, generating statistics and reports that are made available to users.

Art. 13 – Final Provisions

These guidelines come into force on the day following the issuing of the relevant Director's Decree.

The guidelines are subject to periodic review to ensure continuous alignment with international and national directives and commitments undertaken.

Appendix.1 Data Management Plan Template (DMP)

1. General information

- Project title:
- Principal Investigator (ORCID):
- Date:
- Grant number if available:
- Version of the DM: specify whether the project is in the presentation phase or has already been financed
- Support in drafting the DMP:

2. Data description

- Data type: describe the type of the data you plan to collect or generate (e.g. experimental data, observational data, models, software, etc.)
- Data format: specify the formats in which the data will be collected or generated (e.g. CSV, TSV, NetCDF, HDF5, JSON, XML, etc.)
- Estimated Data Volume: rough estimate of the volume of data that will be generated.

3. Metadata and data standards

- Data Standards: describe the metatdata standards that will be used to document the data (e.g. Dublin Core, DataCite, etc.)
- Documentation Plan: Explain how data will be documented to ensure others can understand and reuse them.

4. Data storage and retention

- Retention Strategies: describe where and how the data will be physically and digitally stored during the research
- Data Repository: Indicate the repository where the data will be deposited for long-term preservation (e.g. Zenodo, Dryad, institutional repository, subject repository, etc.) and the unique and persistent identifier used
- Backup and Security: detail the security measures and backup plans that the repositories have in place to protect data from accidental loss or unauthorized access.

5. Data access and sharing

- Access Conditions: define who can access the data during and after the project is completed
- Sharing Timings: specify when the data will be made available to third parties and if there are any embargo periods
- Licenses and Restrictions: elaborate the licenses under which the data will be shared (e.g. Creative Commons and any specific restrictions for sensitive data).

6. Responsibilities and resources

- Data administrators: list the team members responsible for data management
- Needed resources: estimate the financial, human, and technological resources needed to implement the DMP.

7. Ethical and legal aspects

- Legal Compliance: ensure compliance with data protection laws (e.g. GDPR).

- Informed Consents: include details on how informed consents will be handled if the data concern human subjects
- Advice and authorizations of Ethics Committee: indicate any ethics committees consulted.

8. Data reuse

- Reuse Potential: describe reuse potential of the data by other researchers and how this will be facilitated
- Licence: specify the type of licence adopted (e.g. Creative Commons etc.).

9. Appendixes and attachments

- Checklist: Checklist for periodic review of the DMP
- Consent Forms: copies of consent forms, if applicable
- Other relevant documents: templates and guidelines for preparing the DMP.

Checklist

This checklist is designed to facilitate the periodic review of your Data Management Plan. Be sure to consider the following points:

- Completeness:
  - Are all fields in the DMP complete?
  - Have all types of data collected or generated been identified and described?
- Compliance:
  - Does the DMP comply with funding policies and relevant ethical and legal regulations?
  - Is it compliant with institutional policies?
- Accessibility:
  - Are data easily accessible to team members?
  - Are there measures in place to ensure that sensitive data are accessible only to those who are authorized to view them?
- Data Sharing and licences:
  - Are plans for data sharing clear and realistic?
  - Have appropriate licences been applied to datasets to facilitate data reuse?
- Storage and security:
  - Are storage and backup solutions adequate and secure?
  - Have security measures been implemented to protect data from unauthorized access or accidental loss?
- Budget:
  - Has a specific budget been allocated for data management?
  - Are there any additional unforeseen costs?
- Responsibility:
  - Are responsibilities for data management clearly defined and understood by all team members?
- Future uses and digital preservation:
  - Are there any plans for long-term preservation of the data?
  - Will the data be usable by other researchers in the future?

Consent forms

Consent forms are required if the research includes information that identifies or makes identifiable, directly or indirectly, a person, to ensure that participants are fully informed and give consent to the collection and use of their data. Here are some key elements to include:

- Research Project title: provide context for the form
- Purpose of data collection: clearly explain why the data is being collected and how they will be used
- Details on how to withdraw consent: information on how participants can withdraw their consent at any time
- Privacy and security measures: describe how personal data will be protected
- Contact for questions: provide contact information for inquiries.
- Participant signature: a space for a signature confirming informed consent

Other documents

- European Commission, Horizon Europe. Data Management Plan Template: https://enspire.science/wp-content/uploads/2021/09/Horizon-Europe-Data-Management-Plan-Template.pdf
- Cohort Coordination Board: Horizon Europe Data Management Plan Template: https://cohortcoordinationboard.eu/toolkit/horizon-europe-data-management-plan-template/
- Digital Curation Center, How to Develop a Data Management and Sharing Plan: https://www.dcc.ac.uk/guidance/how-guides/develop-data-plan
- OpenAIRE, How to create a Data Management Plan: https://www.openaire.eu/how-to-create-a-data-management-plan
- DMPOnline: Plan to make data work for you: https://dmponline.dcc.ac.uk/
- ARGOS, Management, validation, monitoring and maintenance, and of Data Management Plans: https://argos.openaire.eu/home