DMP du projet "(n, n'g) measurements at NFS"

Plan de gestion de données créé à l'aide de DMP OPIDoR, basé sur le modèle "Science Europe: structured template" fourni par Science Europe.

Plan Details

Plan title	DMP du projet "(n, n'g) measurements at NFS"
Version	First version
Plan purpose/scope	This plan defines the way data (including supplementary data) will be collected during the NFS experiment.
Fields of science and technology (from OECD classification)	Physical sciences
Language	eng
Creation date	2023-11-09
Last modification date	2024-01-14
Identifier	DMP-IPHC-2023-NFS-ghenning
Identifier type	Local identifier
License	Creative Commons Attribution 4.0 International
Associated documents (publications,reports, patents, experimental plan...), website	• PROPOSAL FOR AN EXPERIMENT "238U(n, 2ng) and (n, 3ng) reaction cross sections measurements" : E859_22
Management plans related to the project	• Ganil Management Strategy : https://www.ganil-spiral2.eu/scientists/running-an-experiment-in-ganil/data-management-plan/

Project Details

Project title	(n, n'g) measurements at NFS
Abstract	The aim of the experiment is to study of 238U(n, 2n)237U and 238U(n, 3n)236U by the prompt gamma-ray spectroscopy method with an additional integral determination of the 238U(n, 2n) reaction cross section by the activation technique taking advantage of the value of the half-life of 237U.
Start date	2023-01-10
End date	2025-03-11
Partners	• Institut Pluridisciplinaire Hubert Curien - IPHC (UMR 7178) (200612557C) • Grand accélérateur national d'ions lourds (198318600W) • Horia Hulubei National Institute for R and D in Physics and Nuclear Engineering () • Joint Research Center - Geel () • Energy and Sustainability Research Institute Groningen () • Centre national de la recherche scientifique () • Université de Strasbourg () • University of Groningen ()

Research outputs :

1. Experimental data and associated description (Dataset)

Contributors

Name	Affiliation	Roles
Henning Greg - https://orcid.org/0000-0003-3678-8728	Institut Pluridisciplinaire Hubert Curien	• DMP manager • Data contact • Data documentation manager • Data producers or collector • Project coordinator

Budget

Cost type (Title)	Amount	Lifecycle stage
	0 EUR	Existing reuse data associated costs - **Default**
Hardware (Cables, modules)		Data collection/production associated costs - **Default**

créateur(s) soutien(nen)t ou aient une quelconque relation avec votre projet ou votre soumission.

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1. Data description and collection or re-use of existing data

1.1 Research output description

Name	Experimental data and associated description
Description	During the experiment, the produced data will include : • Raw data, including calibration and background runs, with beam on, and 237U activation measurement. • Geometric description. • Log book. • Any other information that could be of interest (photography, beam profile, ...)
Type	Dataset
Keywords	• Radiation detectors (PhySH - Physics Subject Headings) • Inelastic scattering reactions (PhySH - Physics Subject Headings) • Nucleon induced nuclear reactions (PhySH - Physics Subject Headings) • Nuclear reaction rates (PhySH - Physics Subject Headings) • Nuclear data analysis & compilation (PhySH - Physics Subject Headings) • Spectrometers & spectroscopic techniques (PhySH - Physics Subject Headings)
Keywords (free-text)	
Language	eng
Persistent identifier	E859_22
Identifier type	Local identifier
May contain personal data?	No
May contain sensible data?	No
May take ethical issues into account?	No

1.2 Will existing data be reused?

Justification	Some data from test runs and past simulations will be used for setup and analysis
Reused data	• Previous experimental measurements : /work/dnr/data/nfs/2022/manip-test
Costs	• : 0 EUR

1.3 How new data will be collected or produced?

Name of the method	Dedicaded Setup at NFS
Description	A dedicated setup made of • Fission chambers, • A target, and • Germanium detectors will be used to record the data. Similar setup has been used for Tests in 2021, 2022, and at JRC-Geel with Grapheme and Gains. • Raw data will be recorded with a Faster digital acquisition. • Experimental condition (in particular beam on/off period for the activation part of the measurement) will be recorded on an electronic logbook (elog).
Data Nature	Experimental Data
Equipments, technical platforms used	• SPIRAL2 : https://cat.opidor.fr/index.php/SPIRAL2 • Faster : https://faster.in2p3.fr/ • elog : https://elog.psi.ch/elog/
Costs	• Hardware :

2. Documentation and data quality

2.1 What metadata and documentation (for example way of organising data) will accompagny the data?

Description	Faster files come with a metadatafile indicating DAQ status. Along with the raw data, the log book will contain all information related to the beam (current, duration, frequency, ...) as well as recording conditions. Pictures and measurements will also be recorded to support the analysis work.
Metadata/data standards	• DataCite Metadata Schema : https://rdamsc.bath.ac.uk/msc/m11 • Faster meta data : https://faster.in2p3.fr/
Metadata language code	eng

2.2 What methods will be used to ensure their scientific quality?

Description	Regular data processing will be done during the experiment to ensure that the recorded data is consistent with expectation and past results.

3. Legal and ethical requirements, codes of conduct

3.1 If personal data are processed, how will compliance with legislation on personal data and on security be ensured?

3.2 How will other legal issues, such as intellectual property rights and ownership, be managed? What legislation is

applicable?

3.3 What ethical issues and codes of conduct are there, and how will they be taken into account?

4. Data processing and analysis

4.1 How and with what resources will the data be processed / analyzed?

Description	Basic offline data processing will be done during the experiment to check on detector efficiency, resolution, … Results of these steps will be recorded in the logbook.

5. Storage and backup during the research process

5.1 How will data be stored and backed up during the research?

Storage needs	Raw data from the Faster acquisition system will be directly written to the hard drive of the DAQ computer control. e-Log entries will be collected on a dedicated computer (which may be the same as the DAQ control) and may be accessed remotely via a web interface. Pictures and other relevant files will be added into the elog via the file attachment feature.
Estimated volume of data	500
Unit	GB
Backup policy	• The raw data will be backed up daily on a connected external drive during the experiment.
Measures taken for data security	During the experiment, the recorded data will be stored on the hard drive of the DAQ system. For safety, we should add an external hard drive on which to make local copy each day using `rsync` for incremental backup.

6. Data sharing and long-term preservation

6.1 How will data be shared?

Modalities of sharing	GANIL will keep a copy of the data on its server and provide a DOI for the data set. The data will be available to theresearch team locally in IPHC via the internal network. External collaborators will have access to data *on demand* for specific purposes.
Reusability	data available for reanalysis, either to investiagte the main focus of experiment or look for additionnal informations

6.2 How will data be long-term preserved? Which data?

Justification	All the data recorded during the experiment will be stored for as long as needed. After the analysis is done, data should be curated for long term storage. The long term storage and dissemination will be done according to theGanil Data Management plan
Estimated volume of data	500
Unit	GB
Start date	2030-01-01
Final dispositions	If/when long term storage of the raw data has to stop after a reasonnable storage period, an announcement about the data existence and it's possible near future deletion should be sent to the comunity in order to ensure interested parties can request/access it before it has to be deleted. Metadata about the dataset should persist even after deletion, as the dataset will be referenced to in publications