

Moritz Hannemann

Jülich Center for Neutron Science (JCNS)

MLZ is a cooperation between:

Academic History

- B. Sc. Informatics at University of Augsburg
- M. Sc. Informatics at FAU Erlangen-Nürnberg

Job History

- IT Support during Bachelors (1 year)
- IT Consultant (1 year)

Current Project: **DAPHNE4NFDI**

Problem

- Huge amounts of data everywhere, but scattered and inaccessible
- Everyone uses their own nomenclature, even if only slightly different
- Loosing track of where the data is actually stored
- Knowledge about data is lost
- How to best upload or reference data in publications?
- How to define relations between datasets and samples?
- How to best share data with others?

- Data should be **FAIR**
 - **F**indable: Data must be uniquely identifiable & rich enough in metadata
 - **A**ccessible: Data & metadata must be easily retrievable and conform to access rights
 - **I**nteroperable: Data formats & nomenclature should adhere to common standards
 - **R**eusable: Information about reuse rights and rich metadata to actually reuse it

- Standards
 - Data formats
 - Communication protocols
 - Ontologies
- Metadata Catalogs
 - Storing

- Scientific schema structure
- Meta data source (Front-end / API)
- Search functionality (Front-end / API)
- Instrument description
- Online visualization
- Online evaluation (JupyterHub Integration)
- Data life cycle management
- Logging functionality (SciChat)
- Access management via groups

- Authentication
 - Local accounts
 - AD / Ldap
 - OIDC
- Embargo Time
- Associate DOI's
- Download service (Zip service)

The following software is optional and not included in the standard examples for setting up SciCat.

- Zip service
- SciChat
- JupyterHub
- Landing page server for DOIs

- Modular design
- Backend
 - Nest.js – A javascript framework
 - MongoDB as data storage
 - Uses OpenAPI standards
- Frontend
 - Angular – A javascript framework
 - Completely exchangeable

SciCat Walkthrough



Anonymous / Datasets /

Search Clear

Text Search

Location
V20

Group

Type

Keywords

Select a date range

+ Add Condition

Items per page: 10 1 – 10 of 2668

| Name | Run No. | Source Folder | Size | Start Time | Type | Image | Science Metadata | Proposal ID |
|--|---------|---------------|--------|-------------------------|------|-------|---|-------------|
| Last Neutrons Ever at HZB. | 2511 | ...v20/YC7SZ5 | 203 MB | 2019-12-11 Wed 13:48 | raw | | count_events:5070446 elapsed_time:1404 s | YC7SZ5 |
| WFM Low Res messing with chopper 1 and 2, slit2 pinhole, slit3 fully open. | 2510 | ...v20/YC7SZ5 | 81 MB | 2019-12-11 Wed 13:37 | raw | | count_events:1687555 elapsed_time:616 s | YC7SZ5 |
| slitscan, slit2 scanning, slit3 fully open | 2509 | ...v20/YC7SZ5 | 116 MB | 2019-12-11 Wed 12:54 | raw | | count_events:2520416 elapsed_time:1857 s | YC7SZ5 |
| slitscan, slit2 scanning, slit3 fully open | 2508 | ...v20/YC7SZ5 | 38 MB | 2019-12-11 Wed 12:49 | raw | | count_events:547889 elapsed_time:176 s | YC7SZ5 |
| slitscan, slit2 scanning, slit3 fully open | 2507 | ...v20/YC7SZ5 | 2 KB | 2019-12-11 Wed 12:48 | raw | | file_name:/data/kafka-to-nexus/nicos_00002507.hdf runNumber:2507 | YC7SZ5 |
| slitscan, slit2 scanning, slit3 fully open | 2506 | ...v20/YC7SZ5 | 37 MB | 2019-12-11 Wed 12:47 | raw | | count_events:528663 elapsed_time:109 s | YC7SZ5 |
| slitscan, slit2 scanning, slit3 fully open | 2505 | ...v20/YC7SZ5 | 20 MB | 2019-12-11 Wed 12:45 | raw | | count_events:41932 elapsed_time:44 s | YC7SZ5 |
| slitscan, slit2 scanning, slit3 fully open | 2504 | ...v20/YC7SZ5 | 2 KB | 2019-12-11 Wed 12:42 | raw | | file_name:/data/kafka-to-nexus/nicos_00002504.hdf runNumber:2504 | YC7SZ5 |
| slitscan, slit2 scanning, slit3 fully open | 2503 | ...v20/YC7SZ5 | 21 MB | 2019-12-11 Wed 12:39 | raw | | count_events:76630 elapsed_time:150 s | YC7SZ5 |
| WFM Low Res different phase settings, slit2 pinhole, slit3 fully open. | 2502 | ...v20/YC7SZ5 | 176 MB | 2019-12-11 Wed 10:48 | raw | | count_events:3727819 elapsed_time:6165 s | YC7SZ5 |

SciCat Walkthrough



[? Help](#) [i About](#) [Sign in](#)

Anonymous / Datasets / 20.500.12269/2511nicos_00002511.hdf /

[Details](#)

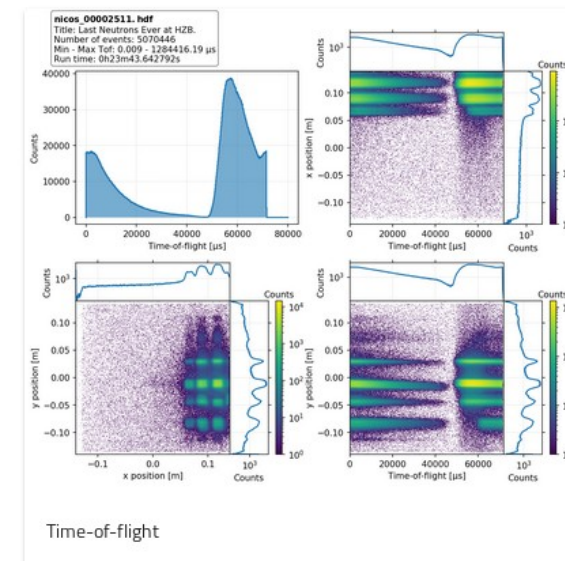
[Lifecycle](#)

About the data

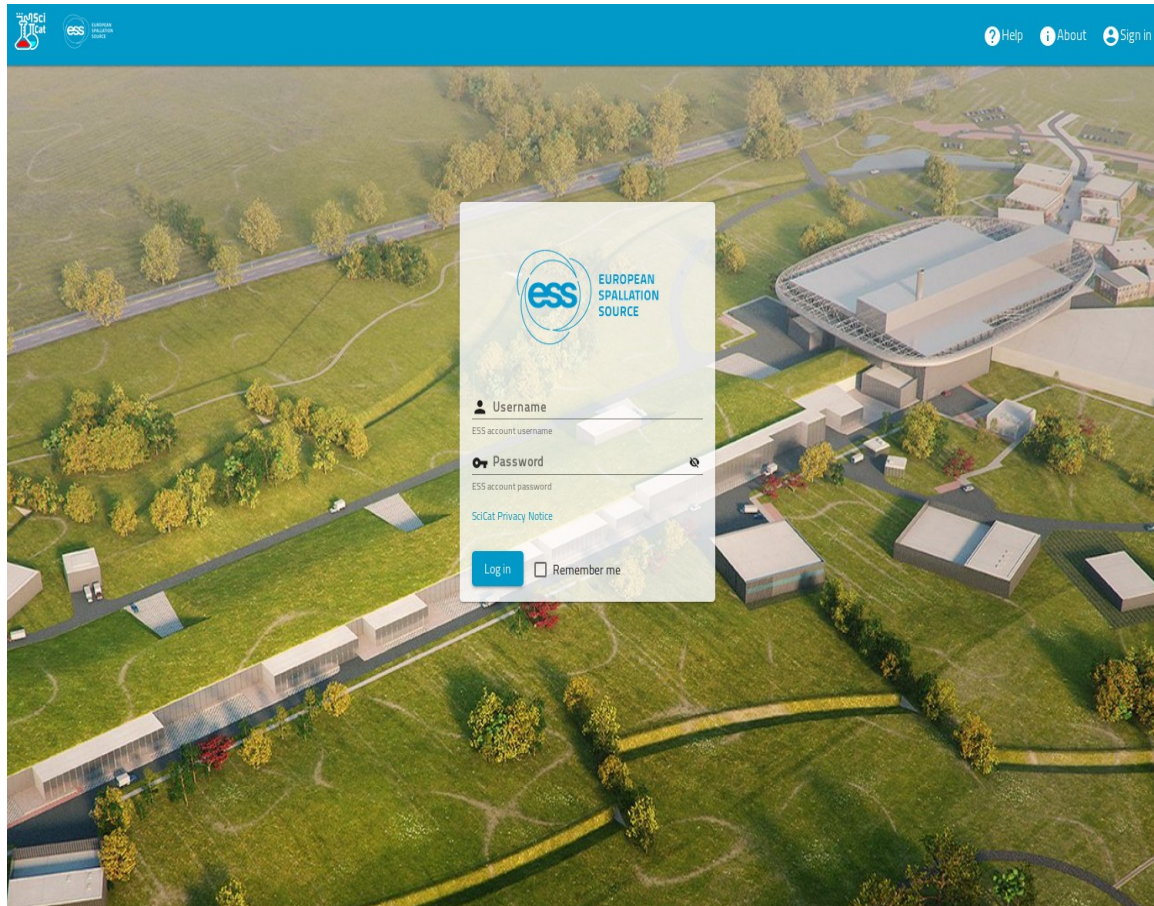
| | | |
|--|----------------------|---------------------------------------|
| | Name | Last Neutrons Ever at HZB. |
| | Description | V20 data |
| | Owner | Peter Kadletz |
| | PID | 20.500.12269/2511nicos_00002511.hdf |
| | Source Folder | /nfs/groups/beamlines/v20/YC7SZ5 |
| | Keywords | v20 neutron |

Structural information



| | | |
|--|-----------------|-----------------|
| | Type | raw |
| | Version | 3.0.1 |
| | Proposal | Final prototype |
| | Sample | Sample for V20 |
| | Size | 203 MB |
| | Orcid | default |




SciCat Walkthrough




SciCat Walkthrough




 Creation Time


2019-12-11 13:48

 Principal Investigator


Tobias Richter

 Creation Location


V20

 Owner Group

ess


 Access Groups


ess,brightness







 Contact Email


Tobias.Richter@esss.se


Scientific Metadata

 View

 Edit

| Type | Name | Value | Unit | |
|-------------|--------------|------------------------------|------|---|
| string | title | Last Neutrons Ever at HZB. | Unit |  |
| string | start_time | 2019-12-11T12:48:03 | Unit |  |
| string | file_name | /data/kafka-to-nexus/nicos_0 | Unit |  |
| number | count_events | 5070446 | Unit |  |
| measurement | elapsed_time | 1404 | s |  |
| number | runNumber | 2511 | Unit |  |

 Add row

 Save changes

Thanks for your attention!
Questions?

Test