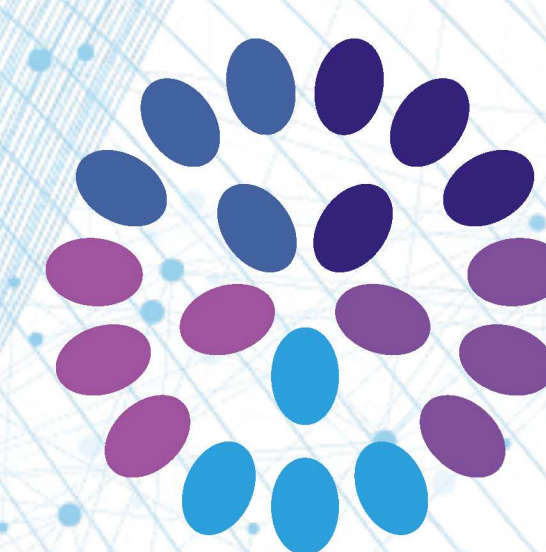


OSCARS enhancing the applications of PaNET



OSCARS

Open Science Clusters' Action
for Research & Society

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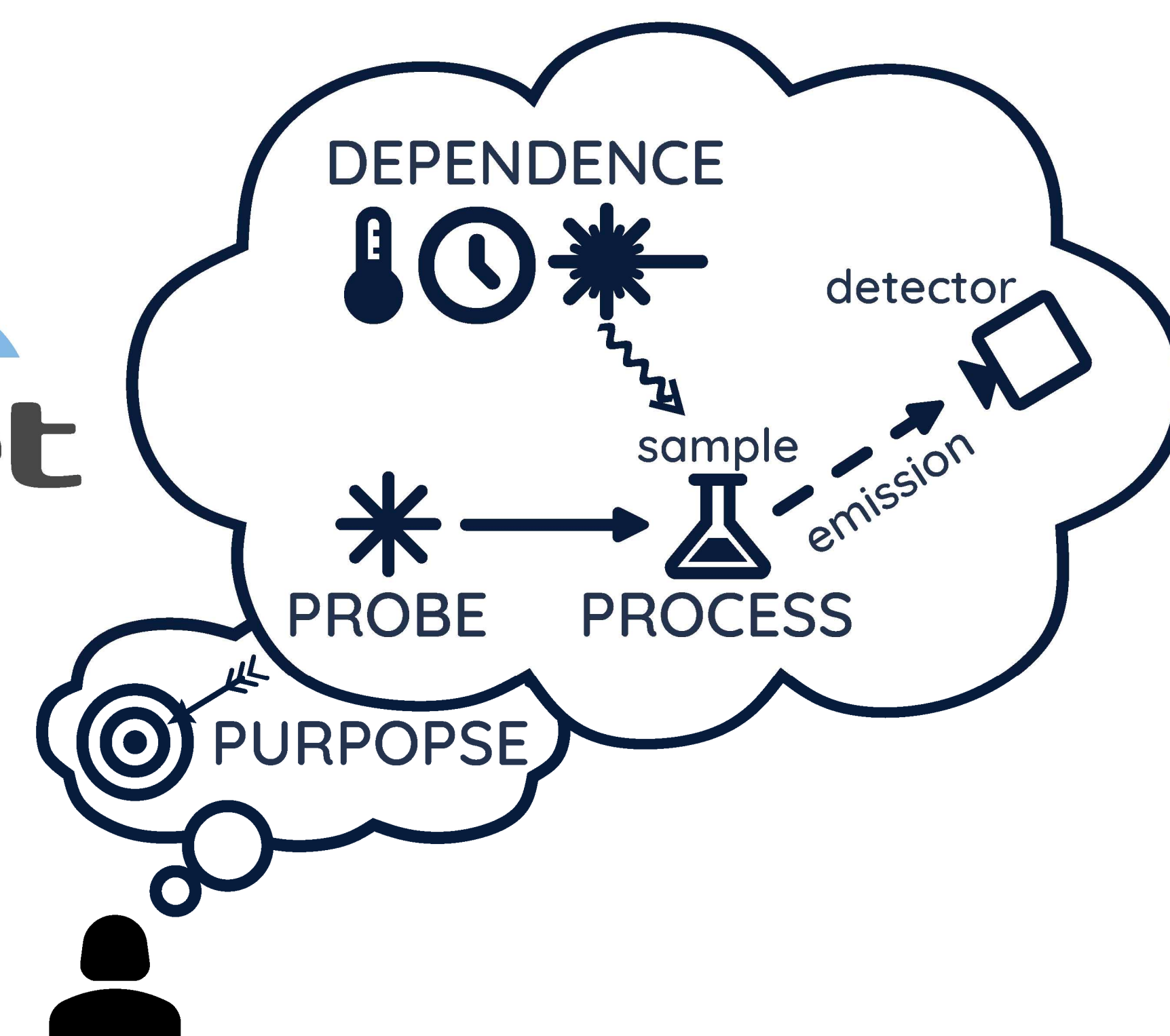
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PaNET - The Ontology of Photon and Neutron Experimental Techniques

- ▶ increasing portfolio of experimental techniques (ETs)
 - ▶ relationships between ETs
 - ▶ physical **process**
 - ▶ experimental **probe**
 - ▶ functional **dependency**
 - ▶ **purpose**
 - ▶ complex structure of techniques → semi-hierarchical vocabulary
 - ▶ **persistent identifiers (PIDs)** for each ET
- ▶ **metadata**: everything that is needed to **explain your data to others***
 - ▶ **persistent identifiers: unique and persistent identification**
 - ▶ PaNET ID: PID for experimental techniques

* Could be you in three months.



Exploring Possible Applications of PaNET

Pilot Beamline Finder

Home / Metadata / Beamline Finder

Beamline Finder

Search a term in **PaNET** and find those PETRA III beamlines that provide that technique.

☒ Include all subtechniques

Find Beamline

Provided Techniques

BL ID	Beamline name	Proposal Submission	Hall	min. E (keV)	max. E (keV)	min. T (K)	max. T (K)
P23	In situ X-ray diffraction and imaging beamline		Ada Yonath	5.0	50.0	3.5	1270.0
P64	Advanced X-ray Absorption Spectroscopy		Paul P. Ewald	4.0	44.0	4.0	290.0
P65	Applied X-ray Absorption Spectroscopy		Paul P. Ewald	4.0	44.0	4.0	290.0

<https://www.desy.de/~nntm/ET2BL.html>

Pilot BibTeX Citation Creator

Technique Name

Create BibTeX Citation **Clear**

BibTeX citation for the selected technique

```
@misc{panet01245,
  title = {cold neutron spectroscopy},
  author = {{ExPaND Consortium}},
  year = {2021},
  howpublished = {The Photon and Neutron Experimental Techniques Ontology},
  url = {http://purl.org/pan-science/PaNET/PaNET01245},
  note = {Experimental technique with super-classes: PaNET01017, PaNET01245. From the PaNET ontology},
  urldate = {2025-11-07}
}
```

Copy to Clipboard **Export to .bib**

<https://www.desy.de/~nntm/ET2BIB.html>

Metadata Catalogs



SciCat (at DESY):

- ▶ integration in experimental metadata ongoing
- ▶ definition of unique metadata field mandatory for **interoperability** and **findability** (FAIR principles)
- ▶ aim: technique selection as trigger for metadata schemas
- ▶ e.g. only ask for energy range when a spectroscopy technique is selected
- ▶ development of metadata schema per technique in progress

iCAT and NeXus:



- ▶ discussions on unique metadata field ongoing

Mappings

- ▶ connect terms from two different vocabularies
- ▶ form a **knowledge graph** (network of information)
- ▶ improving **findability**, thus contributing to **reusability** (FAIR principles)

- ▶ in preparation:

- ▶ Voc4cat *

- ▶ Way for Light *

- ▶ IUCr dictionary *

- ▶ IUPAC gold book *

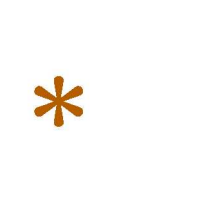
- ▶ Helmholtz Imaging *

- ▶ PhySH *

- ▶ Wikidata *



NFDI for Catalysis-Related Sciences



Outlook and ...

specifying the ET during a measurement

→ **trigger ET-specific metadata schema**

→ capturing relevant and precise metadata

→ enhancing the quality and utility of the data

... Conclusion

We need your help!
Get involved!

<https://tinyurl.com/panet-ontology>



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