Neutron community needs
outcome of the survey

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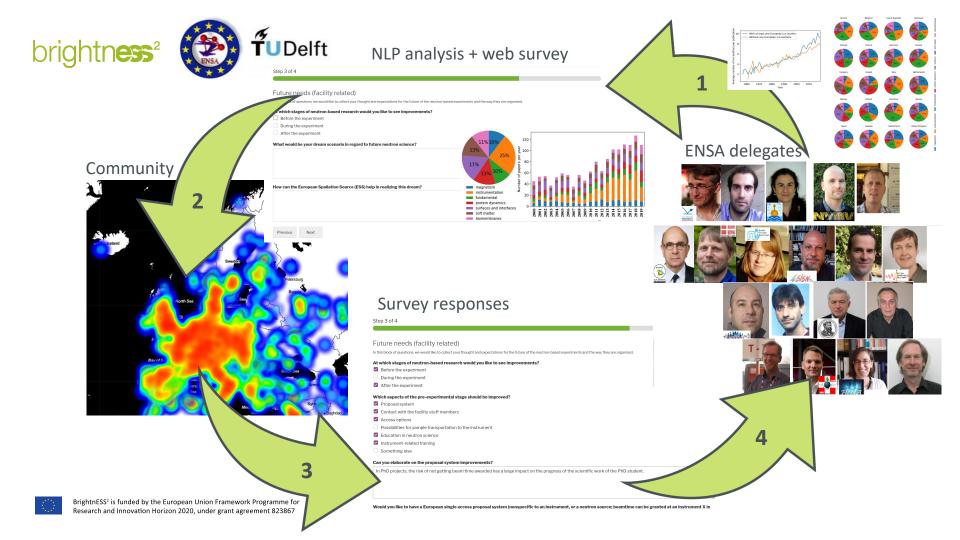
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3rd General Assembly 17-Dec-2020
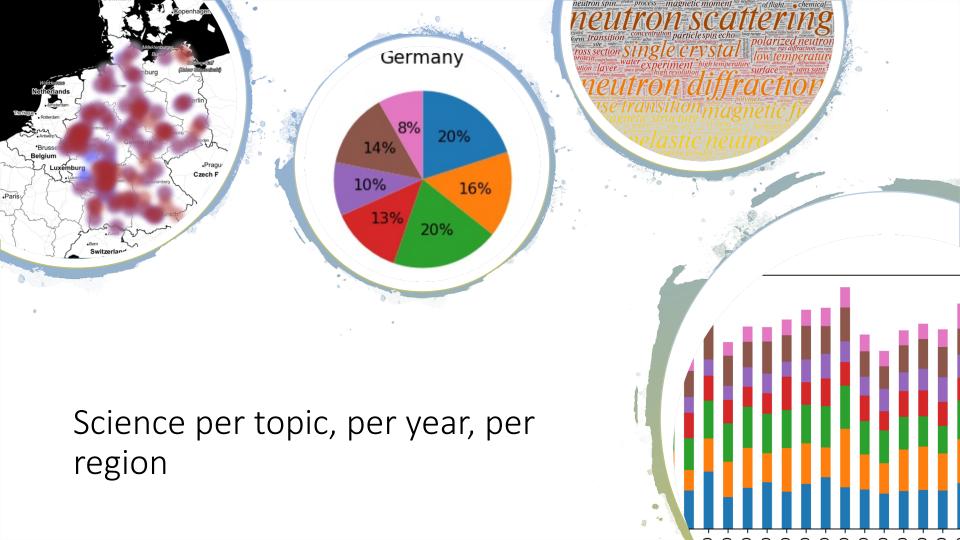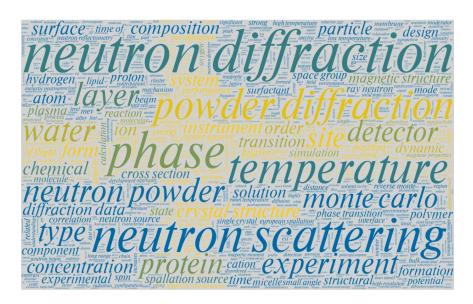
NLP community maps per country per topic
(Germany as an example)

Science per topic, per year, per region

Survey per country

Dear scientist,

Thank you very much for taking the time to fill in our survey. It is a great opportunity to make our voice as a European neutron scientist community heard by European policymakers. The results of the analysis will be used for BrightnESS2 and LENS to define the European neutron landscape for the coming years. Some points of attention before you start the survey:
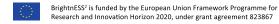
Who are you?

Your experience with neutrons until now

ENSA and Brightness2 would like to get better understanding of the scientist forming the European neutron scattering community

Your level of expertise as a "neutron scientist"

Selected Value: **5**

1 = novice, 10 = expert. Expertise can be experimental, interpretation, modelling, instrument design, etc.

At which stage are you in your scientific career?

○ Student

○ PhD candidate

○ Postdoc

○ Permanent staff member

○ Professor/group leader

○ Other

Which percentage of your research activity is neutron-related?

Selected Value: **50**

Including all of the time you spend starting from experimental design and including all the steps of data gathering, treatment, modelling and publishing.

Which of the topics found by our AI are related to your research?

☐ Magnetism

☐ Instrumentation

Your needs (1)

Future needs (facility related)

In this block of questions, we would like to collect your thought and expectations for the future of the neutron-based experiments and the way they are organized.

At which stages of neutron-based research would you like to see improvements?

☐ Before the experiment

☐ During the experiment

☐ After the experiment

What would be your dream scenario in regard to future neutron science?

How can the European Spallation Source (ESS) help in realizing this dream?

Previous   Next

Your needs (2)

Future needs (not-facility related)

Science is typically not-for-profit, but acquiring/securing funding can consume a lot of time for a scientist. Here we would like to hear your opinion on such factors that are not directly related to your neutron science, but that can have a large impact on what neutron science you can do.

I want funding schemes improved as follows:

☐ Small-scale (experiment-specific): [money for travel, accommodation, students joining, colleagues joining]

☐ Medium-scale (project-specific) [phd-candidate lifetime – 3-4 years, covering all the costs, including salary, equipment and materials]

☐ Large-scale (topic-specific) [inter-institutional/international/European collaboration in endeavor to solve a global challenge, neutron research presents less than 51% of the whole package]

☐ Other

Other things that would boost my neutron science:

☐ Better education/training of students

☐ Experts in my field at the facility, during the experiment

☐ AI helping me during the experiment and analyzing the data

☐ Students joining the experiment

☐ FAIR data

☐ Scientific meetings other than the current (workshop, conference, ad-hoc) possibilities

☐ Better/more collaboration with industry

☐ Other
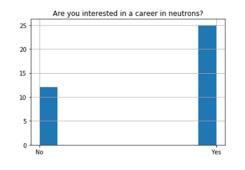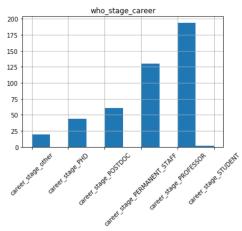
Outcome of survey

13500 inter-related answers + comments

Questions relate to:

Career stage, expertise, methods used, complementary methods used, instruments used, future needs before experiment, future needs after experiment, instrument needs, needs for training/expertise, funding needs, etc.

Inter-relations between questions/answers are depicted in 'wordclouds'

Wordclouds for grouping

BrightnESS² is funded by the European Union Framework Programme for Research and Innovation Horizon 2020, under grant agreement 823867

Projection on the 'career axis'

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brightness²

Neutron Science & Industry

Facility Access System

Experiment Optimization

Complementary sources

Software & Data Analysis

Facility Staffing

brightness²

Complementary sources

Perspective of the 'user'@'facility'

student@experiment

Complementary Sources

Neutron Science & Industry

Software & Data Analysis

Training / education

Facility Access System

Facility Staffing

Analyzing big data requires expertise

Experiment Optimization

Brightest Sources Needed

Teams with broad expertises

outlook:

- extend NLP database, community science analysis. Develop tools for D2.9.

- sustainability: disseminate developed tools to national communities

- ENSA publication on method+results

- webinar with feedback to community about the report

- collaboration with ESUO on LENS/LEAPS initiative