SWEDNESS/LINXS Doctoral-level course on neutron imaging

Report of Contributions

https://lindico453.srv.lu.se/e/220

Contribution ID : **1** Type : **not specified**

Connection

Monday, 17 May 2021 13:00 (15)

Contribution ID : **2** Type : **not specified**

Welcome: aims, structure, assessment

Monday, 17 May 2021 13:15 (15)

Presenter(s) : HALL, Stephen (LINXS)

Contribution ID : **3** Type : **not specified**

Introduction to neutron imaging: basic concepts/definitions, interaction mechanisms, introduce different modalities (set the scene for the coming days: Polychromatic, monochromatic, wavelength resolved, steady state versus ToF,….)

Monday, 17 May 2021 13:30 (60)

Presenter(s) : WORACEK, Robin (ESS)

Contribution ID : **4** Type : **not specified**

Introduction to (neutron) tomography: acquisition to reconstruction including mathematical principals, with a focus on transmission (attenuation) imaging and including potential artefacts such as rings, beam hardening etc..

Monday, 17 May 2021 15:00 (120)

Link to material: material.https://imaginglectures.github.io/Tomography4NI/

Presenter(s) : KAESTNER, Anders (PSI)

Contribution ID : **5** Type : **not specified**

Introduction to assignment

Monday, 17 May 2021 17:15 (15)

Beamtime proposal: see template

Presenter(s) : WORACEK, Robin (ESS); HALL, Stephen (LINXS)

Contribution ID : **6** Type : **not specified**

Preparation for tomography reconstruction tutorial – code installation, Q&A onlineetc.

Monday, 17 May 2021 17:30 (30)

installation instruction video: https://youtu.be/OP_uPeUgN0M

Presenter(s) : KAESTNER, Anders (PSI)

Contribution ID : **7** Type : **not specified**

Tutorial on tomographic reconstruction

Tuesday, 18 May 2021 08:30 (120)

Presenter(s) : KAESTNER, Anders (PSI)

Contribution ID : **8** Type : **not specified**

Neutron imaging beamlines and systems (past, present, future)

Tuesday, 18 May 2021 14:35 (55)

Presenter(s) : WORACEK, Robin (ESS)

Contribution ID : **9** Type : **not specified**

“Extreme” imaging (fast, large, high res.)

Tuesday, 18 May 2021 13:00 (80)

Here is the link to the documentary (first 7 minutes) related to the papyrus unrolling:
https://www.ardmediathek.de/video/w-wie-wissen/das-erste/Y3JpZDovL2Rhc2Vyc3RlLmRlL3cgd2llIHdpc3Nlbi9jMjQ3MV

The ImageJ plugin together with the data from lens adjustment can be found here:

https://nubes.helmholtz-berlin.de/s/k4Lgw9foQjnNPay

Presenter(s) : KARDJILOV, Nikolay (Helmholtz Berlin)

Contribution ID : **10** Type : **not specified**

Complementarity of x-ray and neutron imaging & dual modality

Tuesday, 18 May 2021 16:00 (60)

Presenter(s) : KAESTNER, Anders (PSI)

Contribution ID : **11** Type : **not specified**

Follow-up on reconstruction tutorial

Tuesday, 18 May 2021 17:05 (30)

Contribution ID : **12** Type : **not specified**

Energy selective imaging 1 (steady state sources)

Wednesday, 19 May 2021 13:00 (75)

For wavelength dependent neutron attenuation:
- See slide 9 of “How to write a good beamtime proposal”
- Download of nxs plotter:
https://project.esss.dk/owncloud/index.php/s/u8orDDreG8UpHbf

Presenter(s) : KARDJILOV, Nikolay (Helmholtz Berlin)

Contribution ID : **13** Type : **not specified**

Energy selective imaging 2 (ToF)

Wednesday, 19 May 2021 14:30 (115)

Presenter(s) : WORACEK, Robin (ESS)

Contribution ID : **14** Type : **not specified**

ToF Image analysis: introduction to tutorial and challenge

Wednesday, 19 May 2021 16:35 (25)

TOF Exercise (you can already watch the tutorials):
Data: https://project.esss.dk/owncloud/index.php/s/KoTmUDZUB7VPMaa
TOF tutorial PART 1: https://youtu.be/BXAygH3xLHE
TOF tutorial PART 2: https://youtu.be/cUvai7pssy8

Presenter(s) : WORACEK, Robin (ESS)

Contribution ID : **15** Type : **not specified**

Scattering and magnetic contrast: Phase contrast, grating interferometry, SEMSANS, polarized imaging

Thursday, 20 May 2021 13:00 (90)

Presenter(s) : KARDJILOV, Nikolay (Helmholtz Berlin)

Contribution ID : **16** Type : **not specified**

2D, 3D and 4D Image analysis and quantification

Thursday, 20 May 2021 14:45 (60)

Presenter(s) : HALL, Stephen (LINXS)

Contribution ID : **17** Type : **not specified**

Follow-up on ToF image analysis tutorial

Thursday, 20 May 2021 16:00 (30)

Presenter(s) : Dr. WORACEK, Robin (ESS)

Contribution ID : **18** Type : **not specified**

Project presentations

Friday, 21 May 2021 13:00 (75)

Each group should aim to provide feedback to the other groups on their proposals, identifying strong/weak points in the
- presentation
- scientific background and justification
- justification of neutron imaging method and beamline
- description of experiment
- discussion on what will be the outcome of the experiment (including how the data might be analysed)
- over all rating of proposal (would it get beam time)

Presenter(s) : WORACEK, Robin (ESS); HALL, Stephen (LINXS)

Contribution ID : **19** Type : **not specified**

Summary and wrap-up

Friday, 21 May 2021 14:15 (45)

Presenter(s) : HALL, Stephen (LINXS)

Contribution ID : **20** Type : **not specified**

How to write a good beamtime proposal

Tuesday, 18 May 2021 15:30 (15)

Presenter(s) : WORACEK, Robin (ESS)