HERCULES
European School

Last update: 13/02/2024

Neutrons and synchrotron radiation for science

EXPERIMENTAL TRAINING

from 11th to 15th March at:

> ALBA *in Barcelona, Spain*
> ELETTRA/FERMI *in Trieste, Italy*
> KIT Light Source *in Karlsruhe, Germany*
> SOLEIL *in Saint-Aubin, France*

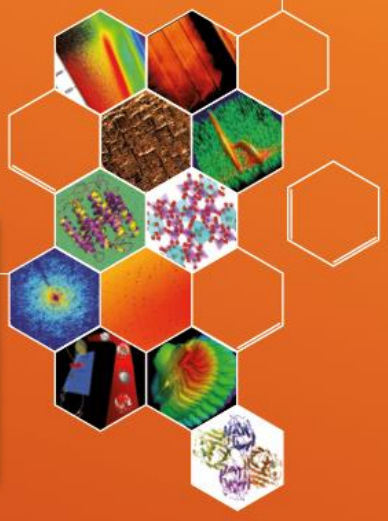
and the other weeks at:

> CNRS, ESRF, IBS, ILL *in Grenoble, France*

26th February to 28th March

Grenoble, FRANCE

ON-LINE APPLICATION OPEN FROM
1st August to 8th October 2023
https://hercules-school.eu



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ORGANISATION

ORGANISED BY:

Université Grenoble Alpes (UGA)
Grenoble INP-UGA Institut d'ingénierie et de management

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- European Synchrotron Radiation Facility (ESRF)
- Institut Laue Langevin (ILL)
- Synchrotron ALBA
- Elettra Sincrotrone Trieste
- Deutsches Elektronen-Synchrotron (DESY)
- European XFEL
- Karlsruhe Institute of Technology (KIT)
- Swiss Light Source (SLS) - Paul Scherrer Institute (PSI)
- Synchrotron SOLEIL
- Commissariat à l'énergie atomique et aux énergies alternatives (CEA): Direction de la Recherche Fondamentale (DRF)
- Centre National de la Recherche Scientifique (CNRS): Institut National de Physique & Laboratoires du Polygone Louis Néel, Grenoble
- Institut de Biologie Structurale (IBS)
- Laboratoire Léon Brillouin (LLB)
- European Molecular Biology Laboratory (EMBL)
- Centre of Excellence of Multifunctional Architectured Materials (CEMAM)
- Grenoble Alliance for Integrated Structural & Cell Biology (GRAL)
- Laboratoire d'Alliances Nanosciences-Energies du Futur (LANEF)
- Labex Minos
- Observatoire des Sciences de l'Univers de Grenoble (OSUG)
- STREAMLINE
- DECTRIS
- Fédération Française de Diffusion Neutronique (2FDN)
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DUDING Marine marine.duding_at_esrf.fr	ESRF	ESRF communication group
MONFRONT Stéphanie monfront_at_ill.fr	ILL	ILL Public relations Communication Officer
GUERARD Virginie guerardv_at_ill.fr	ILL	ILL Public relations Communication Officer

GENERAL INFORMATION

HERCULES is a 5 weeks course designed for training students and scientists from European universities and laboratories in the field of neutron and synchrotron radiation.

It includes a common part during a week and a half, followed thereafter by two parallel sessions:

SESSION A:	SESSION B:
Physics and chemistry of condensed matter (48 full-time and 28 part-time* participants).	Biomolecular and soft condensed matter (24 full-time and 5 part-time* participants).

* part-time participants will attend only lectures on weeks 1, 2, 4, and 5

It is mainly organised from Grenoble, from the European Schools Office on the Presqu'île Scientifique, where the Institut Laue Langevin (ILL) and the European Synchrotron Radiation Facility (ESRF) are also located.

The HERCULES course includes lectures (for all participants) together with practicals, labs, tutorials, visits of large scale facilities, and a poster session (for full-time participants only).

The HERCULES 2024 school will be organised on site for all full-time participants and online for the part-time ones. Week 1 will take place at LPSC in the scientific Polygon area and weeks 2, 4, and 5 will take place at **ILL** and **ESRF**, both located on the **EPN campus** (see map on page 11), while week 3 (from 11 to 15 March) will take place outside Grenoble, at one of the following partner facilities:

→ the Spanish synchrotron source **ALBA** near Barcelona,
→ the Italian synchrotron light source **Elettra** and Free Electron laser Radiation for Multidisciplinary Investigations (**FERMI**) in Trieste,
→ the German synchrotron light source **KIT** in Karlsruhe,
→ the French synchrotron source **SOLEIL**, near Paris.

The language of the course is **English**. The time zone is **Central European time** (**UTC+1**).

TIMES OF LECTURES, PRACTICALS, LABS AND TUTORIALS

LECTURES organised from Grenoble

Most of the time (see timetables enclosed in the brochure):

- in the morning from 8:40 to 12:30 with a 30' coffee break at 10:20
- in the afternoon from 14:00 to 17:50 with a 30' drinks break at 15:40

PRACTICALS, LABS, AND TUTORIALS organised from Grenoble

All practicals, labs, and tutorials start at 9:00 in the morning and 14:00 in the afternoon, and last about 3.5 hours. Practicals correspond to hands-on experiments at large scale facilities ILL and ESRF, Labs correspond to hands-on experiments in CNRS, ILL, XENOCS or IBS laboratories, while tutorials consist mostly in data treatment, without the experimental part.

IN CASE OF EMERGENCY – PHONE NUMBERS

SERVICE	CONTACT
SAMU (Emergency services)*	15
Police*	17
Pompiers (Fire brigade)*	18
Appel d'urgence européen (European emergency call)*	112
Centre Anti-Poison (Poisons unit)	+33 (0)4 76 42 42 42
Chemist: Pharmacie Saint Bruno	+33(0)4 76 96 06 61 Address: 82, cours Berriat. Grenoble
Doctors (near the hotel)	
Roux Jean-François 3 rue Arago	+33 (0)4 76 46 89 33 +33 (0)6 89 94 42 12
Vivodtzev Jacques 26 rue Félix Esclangon	+33(0)4 76 21 36 71

** Free phone number*

INFORMATION ABOUT UGA FIGHT AGAINST DISCRIMINATION

The University Grenoble Alpes, for many years now, have had a policy aimed at promoting equality between men and women among our staff and students, fighting against discrimination and working to make our territory welcoming.
https://www.univ-grenoble-alpes.fr/about/societal-and-environmental-commitments/equality-and-the-fight-against-discrimination/

If you are victim or witness of sexual and gender-based violence (SGBV), discrimination or harassment taking place at HERCULES School, you can:

- get in touch with HERCULES' direction
- use the following form to report the incidents to Université Grenoble Alpes
https://www.univ-grenoble-alpes.fr/about/societal-and-environmental-commitments/ending-sexual-and-gender-based-violence-sgbv-/
- get in touch with your home university.

POSTER SESSION

You have to prepare **one** poster about your research work. Size A0, portrait format.
This year the poster session will take place in 4 sessions: March 1st and 7th, from 4:00 p.m. to 5:00 p.m. and from 5:00 p.m. to 6:00 p.m. (12 posters in A and 6 in B each time).
All posters will be displayed from March 1st to 8th.
2 prizes will be awarded in session A and 1 prize in session B, for each day.

SNOWSHOES OUTING
On Sunday 3 March

Meeting Point from 8:15 a.m. to 8:30 a.m. in front of the Hotel.

Bus Departure: 8:30 SHARP

The outing is organised in the mountain near Grenoble, in the Chamrousse ski station.
Snowshoes and poles are provided.

You will need walking or snow shoes. If necessary you can rent it.
An example of shop in Grenoble to rent snowshoes:
https://www.skiprobel.com/

Don't forget to bring with you:

- Warm clothes (gloves are very important)
- Waterproof shoes / boots
- Sun glasses and cream (if the weather is sunny…)
- Picnic for lunch

You will have professional guides on site.

PRACTICAL INFORMATION

WELCOME ON SUNDAY EVENING

Participants are expected to arrive in Grenoble on **Sunday 25th February 2024.**

When you arrive in Grenoble, whether it is by train, plane, or car, please **register at the "HERCULES desk"** in the **Appart Hôtel - Séjours & Affaires Grenoble Marie Curie**, situated not far from the train station, at a few minutes' walk or by tram (see map on next page). Members of HERCULES committee will be present **between 6:00 PM and 9:00 PM**.

A 'buffet' for dinner will be served at the hotel from 7:00 to 8:30 PM.
If you arrive after 9:00 PM, don't worry, a special procedure exists, you should receive it with the email "Final information about session".

ACCOMMODATION

Participants will stay in the following hotel (except the "local ones"):
Séjours & Affaires Grenoble Marie Curie - Apparthotel
58 rue Félix Esclangon, 38000 GRENOBLE
Tel : +33 (0)4 76 84 72 22
Mail: grenoble.mariecurie_at_sejours-affaires.com
Web site: https://www.sejours-affaires.com/uk/hotel-residence-aparthotel-grenoble-7.html

Small studio flats are booked from Sunday 25th February evening to Saturday 9th March morning, then from Saturday 16th March evening to Friday 29th March morning in Grenoble. Accommodation is also organised for the nights in Barcelona, Trieste, Karlsruhe, and in Paris area, from Saturday 9th March evening to Saturday 16th March morning. A room will be specially booked in Grenoble to store your luggage during the travel outside Grenoble.
The hotel is close to bus and tram stops. The suites are fully-equipped, furnished, and fitted-out and include: a living room with a large bed, a **television**, an office area, a **fully-equipped kitchen** (hotplate, refrigerator, microwave, and dishes), and bathroom.

MEALS IN GRENOBLE

Breakfast (included with the room in the fees)**:**
From Monday to Friday: Continental breakfast is available from 7.00 to 9.30 A.M in the hotel.
On Saturday and Sunday: on Friday for Saturday and Sunday, breakfast-boxes will be left in the apartments (2 per person for the week-end).
Lunch:
Lunch will be taken in the ILL/ESRF restaurant during the stay in Grenoble (excluding the weekend). This restaurant is close to the lectures place. We shall provide a canteen card which will be credited by ESRF for week-day lunches (included in the fees).
Coffee is also available next to the restaurant.
Dinner:
Dinners and weekend meals are not supported by HERCULES. There are many reasonably priced restaurants near the hotels or it will be possible to cook in your studio flat.

MAP AND INFORMATION ABOUT THE IMPORTANT LOCATIONS:

The map below shows the Grenoble train station, the **Séjours & Affaires Grenoble Marie Curie - Apparthotel** where the HERCULES school welcome is organised on Sunday evening, together with the location where the participants will be accommodated in Grenoble.

To go to LPSC & EPN campus:

The way to go from the **Apparthotel** to the LPSC (lectures during week 1) and EPN campus (weeks 2, 4 and 5) is also shown:

- Take the B **line, "Oxford" direction**, at tram stop "Cité internationale"
- Get off at the "Oxford" stop, terminus.

To enter the LPSC campus, you will have to bring:
- YOUR **PASSPORT OR ID CARD**, on the first day
- YOUR **HERCULES BADGE** (given at the hotel), on the following days

To enter the EPN campus, you will have to bring:
- YOUR **PASSPORT OR ID CARD**, on the first day
- YOUR **EPN CAMPUS BADGE**, on the following days

MAP & MEETING POINT ON MONDAY MORNING, FOR THE 1ST DAY OF THE SCHOOL

- The **meeting point for the HERCULES welcome on Monday 26th February** will be **at 8:30 at LPSC, 53 avenue des martyrs, Grenoble.**

⚠ **Please plan to be there a little earlier because checks are being made at the entrance and there are many of you!**

- **From 11:00 to 12:30** (depending on the participants*) you will go at the **site entrance of the EPN campus**. After having shown your passport or ID card, your EPN badge will be distributed to you there (you will be photographed and the badge will be issued on site).

**this information will be given at the hotel, during the welcome on Sunday evening.*

Then, you will be guided to the ILL50 building, where a 4-digit code will be given to you, necessary to enter the ZAC (Zone Accès Contrôlé) of ILL.

IMPORTANT:

Your EPN badge and this code will be needed every day to enter the EPN campus and the ZAC

- In the map of the EPN campus shown below, the site entrance and the locations where the lectures will take place are enlightened (ILL4, CIBB, and central ESRF buildings).

ESRF
IBS
ILL
EMBL

ESRF

- (A) Central Building & Reception
- (B) Visitor Centre
- (C) Safety training
- (D) Experimental Hall
- (E) Control Room

ILL

- (0) ILL50 ILL Entry point (ZAC access badge) Remote instrument control rooms
- (1) ILL1
- (2) ILL2
- (3) ILL3 ILL stores
- (4) ILL4 Chadwick amphitheatre Seminar room & Offices
- (5) ILL5 Reactor building Experimental hall
- (6) ILL22 Experimental hall
- (7) ILL7 Experimental hall
- (8) ILL17
- (9) ILL9 Works council building
- (10) ILL26
- (11) ILL19 IT building

Site entrance
Science building
CIBB building
Medical Service
Guest House
Restaurant & Cafeteria
Scientific Library

LAPTOPS AND WIRELESS ACCESS at LPSC and on EPN CAMPUS:

- The participants are strongly recommended to bring their laptops, as they will need it for most of the tutorials, and for some of the labs and practicals.

- **AT LPSC (week 1)**: The participants will be able to connect to Eduroam.

- **ON THE EPN CAMPUS**: The participants will be able to connect to the ILL and EPN WiFi by using the login and password of their **ILL user accounts** (created in the ILL user club).

From the ILL: connect to "ILL Scientific Visitors" with your **login** as username
From CIBB, IBS, and ESRF: connect to "EPN Visitors" with **login_at_ill.fr** as username

LOCATION OF THE HERCULES OFFICES:
Clotilde, Runchen, Youlia, and Joseph will answer your questions

- **Week 1:** LPSC main building, first floor, corridor on the right of the stairs: rooms 106 (Youlia), 104 (Joseph), 102 (Runchen) & 100 (Clotilde).

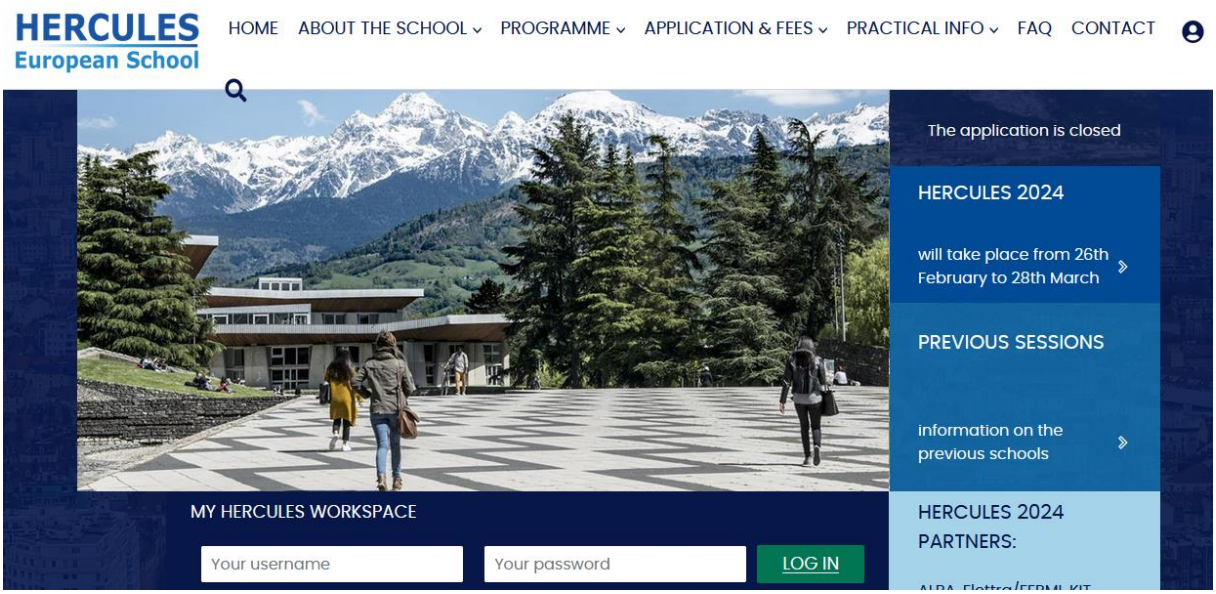
- **Weeks 2, 4, and 5**: in the **ILL 50 building**, ZAC entrance, just before the entrance turnstiles, **room 127 or 128** (1st floor).

- **On 7 March afternoon & 28 March**: at **ESRF**, **room CB 209**.

GENERAL INFORMATION ABOUT THE HERCULES WEBSITE

https://hercules-school.eu

In case of any problem, please **report at** webmaster_at_hercules-school.eu



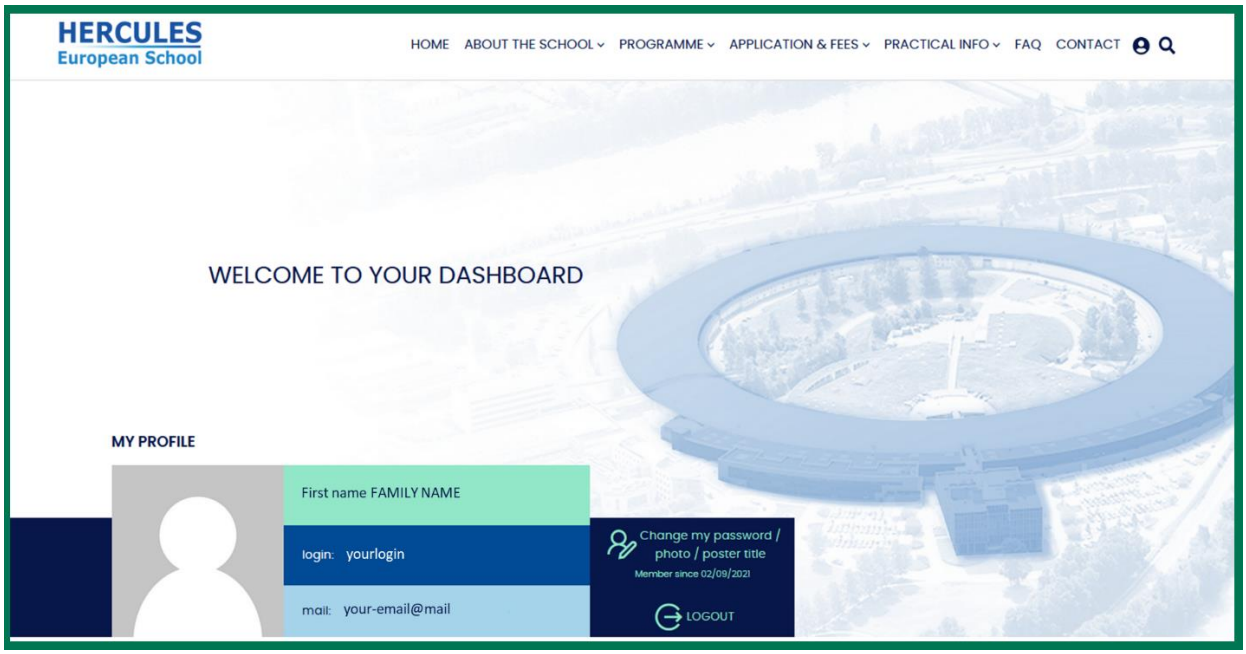
The Hercules participants will be brought to use the HERCULES website a lot during the school, for the schedule, the evaluations of the classes, the portrait galleries, …

To do so, the participants will have to **connect everyday with their login and password**, and then go on their **dashboard** MY DASHBOARD → https://hercules-school.eu/my-dashboard

If still logged in from the previous day, it is recommended to **refresh this page every morning**.

On the next pages are screen captures of "MY DASHBOARD" web page, from the top to the bottom of the page, followed by some explanations.

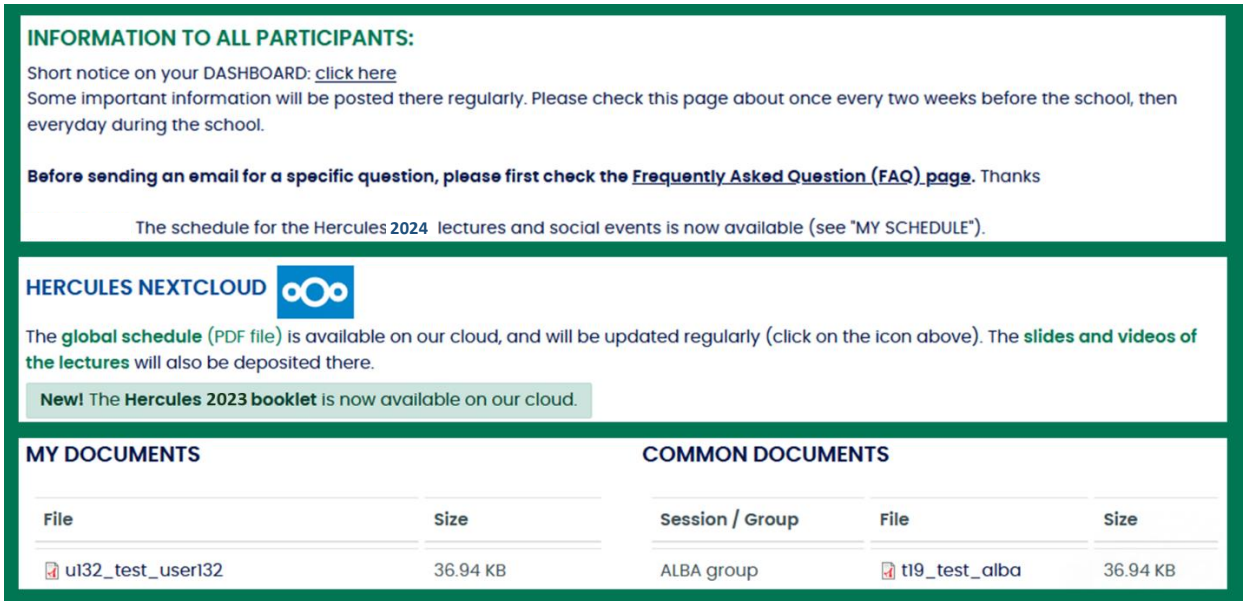
Note that the website also contains some piece of additional practical information, e.g., about the poster session, public transportation in Grenoble, … (no need to be connected for these).



▸ MY PROFILE

The participants can see here the information about their profile on the website and, by clicking on "Change my password / photo / poster title", they can **change** their **password**, their **photograph** or, for the full-time participants only, their **poster title**.

If they wish to change their login or e-mail address, they have to send an e-mail to hercules_at_hercules-school.eu.



▸ INFORMATION

This part (some typical extracts are shown here) will be updated constantly during the school. **All last-minute information and useful links will be posted here**.

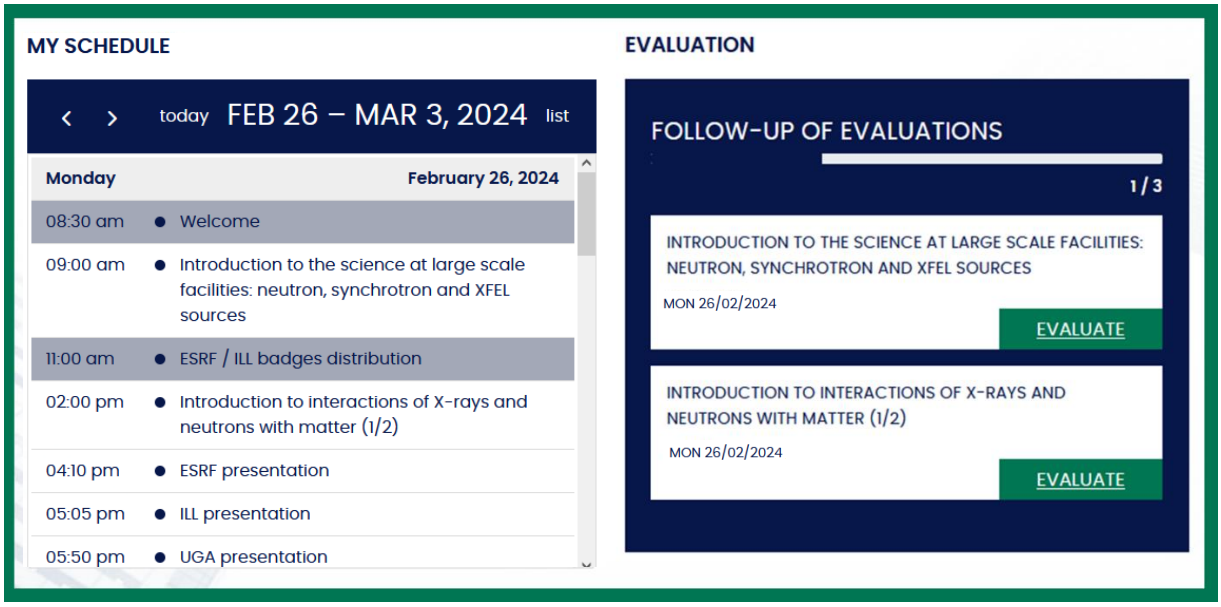
The final evaluation of the school will also be accessible from here.

MY DOCUMENTS

All personal documents like, e.g., the nominative certificate of attendance, delivered at the end of the school, will be uploaded in this space, and will be visible only by the concerned participant.

COMMON DOCUMENTS

All documents common to the entire Hercules session (e.g., the booklet) or to a specific group (e.g., concerning the travel to the partner facility), will be deposited here, and visible only by the concerned participants.



MY SCHEDULE

The participants will see their complete schedule during the school (except week 3, for the partner sites):

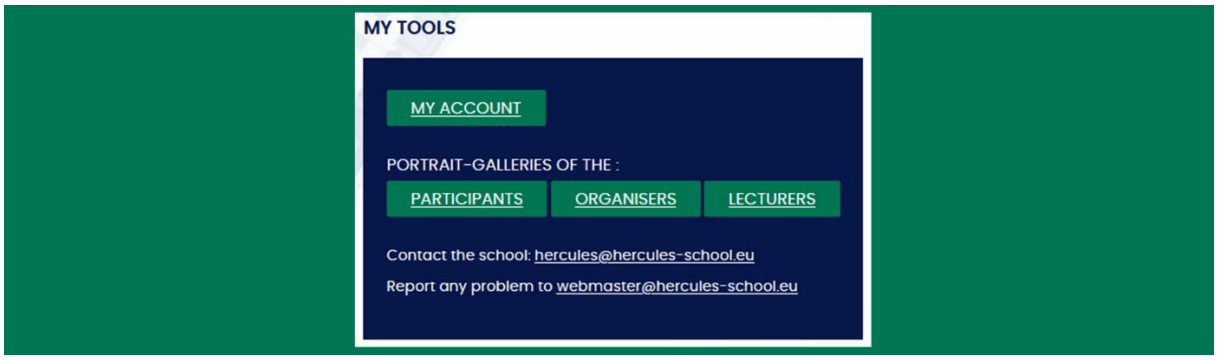
- Lectures from the common (●), A (●) or B (●) session
- Practicals / labs / tutorials in small groups from the A (●) or B (●) session
- Other events (welcome cocktail, visits, poster session, …)

By clicking on one of these events, additional information can be found: lecturer/instructor for lectures/hands-on trainings, summary, location (for on-site participants) and Zoom link (for online participants) … **Careful**: there will be different Zoom links for the various courses!

Always use this "MY SCHEDULE" tool to find the lecture room or Zoom link

EVALUATION

The participants will have to fill in day-by-day the evaluation for each lecture, practical, … The date and time, as well as the lecturer/instructor names, are recalled after clicking on "EVALUATE", then a few questions are asked (it will take you only a few seconds to a few minutes, if you leave comments, for each of them). The evaluations will automatically appear here once they are passed and **the "follow-up of evaluations" will allow the participants to check that they are up to date with their evaluations**.



MY ACCOUNT

A few additional information is given here, in particular, the **session and group** of the participant, as well as the **reference number** (a01, a02, …, b01, b02, ….) used in the booklet for the practicals / labs / tutorials schedules in Grenoble (full-time participants only).

This yields to the same web page as when clicking on the icon in the top bar menu.

PORTRAIT GALLERIES

The **photographs** of all participants, organisers (in Grenoble and partner sites), and lecturers teaching in Grenoble are displayed after clicking on the corresponding button.

PARTICIPANTS portrait gallery: The participants can use the **SEARCH tool** (see below) to find a given participant (through his Surname / Family name, Name, or Reference number) or to filter on the A or B session or on a group (part-time, full-time, ALBA group, …). By clicking on the photograph of a given participant, the information on his/her session and group is given, and an e-mail can be sent to him/her.

LECTURERS and ORGANISER portrait galleries: Similarly, a search on the Location / Partner site (Grenoble, ALBA, …) can be done for the organisers, while a search on the session (common, A, or B) can be done for the lecturers, in addition to the search by name.

LIST OF FULL-TIME PARTICIPANTS:

The site and group for week 3 are indicated,
as well as the reference number (#) for practicals taking place during weeks 2, 4, and 5

SESSION A

FAMILY NAME	First name	Site	Group	#
ANIL KUMAR	Sreelakshmi	ALBA	A1	a01
BELAK VIVOD	Matic	Elettra-FERMI	A4	a02
BORUP	Anders	KIT	A1	a03
CHU	Kang-Ching	SOLEIL	A1	a04
DEHUE	Mathilde Annick	ALBA	A1	a05
FARRELLY	Adele	ALBA	A1	a06
FINARDI	Alice Margherita	SOLEIL	A2	a07
GAMMAITONI	Giovanni	SOLEIL	A4	a08
GRAVERSEN	Laura Glei	Elettra-FERMI	A3	a09
GUMIENNIK	Uladzislaw	Elettra-FERMI	A4	a10
GUZMAN BRAMBILA	Julio Cesar	Elettra-FERMI	A1	a11
HAIDAR	Ali	KIT	A2	a12
HENAO	Wilson	SOLEIL	A4	a13
HINOJOSA	Vanessa	Elettra-FERMI	A2	a14
HOLÉ	Clément	Elettra-FERMI	A3	a15
HUĆ	Agnieszka Anna	ALBA	A1	a16
JENTSCHKE	Thomas	SOLEIL	A1	a17
KANCKO	Andrej	ALBA	A2	a18
KNAUFT	Manuel	SOLEIL	A2	a19
KÖHN	Christian	SOLEIL	A4	a20
KOUOI	Xavier	Elettra-FERMI	A1	a21
KUMAR	Nitin	Elettra-FERMI	A2	a22
LE THANH	Dat	ALBA	A3	a23
LIEGE	William	ALBA	A2	a24
LIU	Jialun	SOLEIL	A1	a25
LIU	Meng-Ting	Elettra-FERMI	A1	a26
MACHOVEC	Petr	Elettra-FERMI	A4	a27
MASTO	Matteo	KIT	A2	a28
MERZONI	Giacomo	Elettra-FERMI	A3	a29
OUBAID	Yassine	ALBA	A2	a30
PACHECO CACHO	Luís Miguel	KIT	A2	a31
PADRON ALEMAN	Kenny	SOLEIL	A3	a32
PAINGANOOR	Adheena	ALBA	A2	a33
PUNKE	Stefanie	KIT	A1	a34
ROY	Riya	SOLEIL	A3	a35
SAS	Wojciech	Elettra-FERMI	A2	a36

FAMILY NAME	First name	Site	Group	#
SHALABY	Mustafa	Elettra-FERMI	A1	a37
STEPHANT	Thomas	KIT	A1	a38
TAI	Cheng-Ling	ALBA	A3	a39
THOMAS	Oliver	ALBA	A3	a40
THREADINGHAM	Jasper	Elettra-FERMI	A2	a41
VAN KOUGHNET	Kiri	Elettra-FERMI	A3	a42
VIJAY	Kritika	Elettra-FERMI	A4	a43
WALZ	Erik	ALBA	A3	a44
WIGGERS	Christin	KIT	A1	a45
WILD	Peter	SOLEIL	A3	a46
YANG	Runqing	KIT	A2	a47
YOUNG	Robert Scott	SOLEIL	A2	a48

SESSION B

FAMILY NAME	First name	Site	Group	#
AHLERS	Jannis Nicolas	KIT	B	b01
BIELFELDT	Sebastian	Elettra-FERMI	B	b02
BONANO	Gabriele	ALBA	B2	b03
DRDANOVSKI	Jovana	ALBA	B1	b04
DU	Wei-Ting	ALBA	B2	b05
FANG	Wenxuan	KIT	B	b06
FELDERER	Birgit	ALBA	B1	b07
GLERUP	Johan	Elettra-FERMI	B	b08
GUERRERO FLOREZ	Valentina	ALBA	B2	b09
IVANOVA	Ebru	Elettra-FERMI	B	b10
KROG	Lasse Skjoldborg	SOLEIL	B1	b11
LABECKA	Nikol	SOLEIL	B2	b12
LI	Hao	SOLEIL	B2	b13
MA	Li	ALBA	B2	b14
MAZHAR	Aliaa	SOLEIL	B2	b15
MEHLER	Filip	SOLEIL	B1	b16
MIKYSKOVÁ	Michaela	Elettra-FERMI	B	b17
ORIA	Leyre	ALBA	B1	b18
ROGALINSKI	Julia Katharina	KIT	B	b19
SAPALIDIS	Dimitrios	SOLEIL	B2	b20
SCHWENNER	Naike	SOLEIL	B1	b21
SHARMA	Tulika	ALBA	B1	b22
TAJBAKHSH	Kiarash	KIT	B	b23
TOLLEMACHE	Cherie Tania	SOLEIL	B1	b24

LIST OF PART-TIME PARTICIPANTS:

SESSION A

FAMILY NAME	First name
ABDOLRAHIMI	Maryam
ALVES	Bernardo
BAIRAGI	Monica
BAZARGAN	Maryam
COIANA	Gabriele
DHANALAKSHMI	Mano Raj
ESTIRI	Arash
GRACIA CONDAL	Adrià
GRIB	Mustapha
GUPTA	Neha
JAISWAL	Ankit
JALALUDEEN	Mohamed Faizal
KHALIQ	Ahmar
KUMAR	Charan
KUMAR	Shubham

FAMILY NAME	First name
KUMAR	Sudhanshu
KURAWLE	Nilofar
LARMOUR	Orrie
LUO	Mao Yuan
MADAAN	Mohit
MALTONI	Pierfrancesco
MANOJLOVIC	Vuk
MIRSHAHI	Roxana
PANDEY	Jyoti Shanker
PHILLIPS	George
STEELE	James
URS	Thejas Gopal Krishne
WILSON	Kirstin
YU	Yue

SESSION B

FAMILY NAME	First name
FERREIRA SEPULVEDA	Anderson
KONCITIKOVA	Radka
LAMRANI	Taoufik
PEÑA FIGUEROA	Miriam
SHAFIEI KAMEL	Alaleh

PROGRAMME of GRENOBLE

SCHEDULE FOR SESSION A

Last update 12/02/2024

Common lectures
Session A lectures
Other

_at_ILL **ILL4 building:** Chadwick amphitheater (lectures, quizzes, …), Hall (coffee breaks)
_at_ESRF **ESRF central building:** Auditorium (lectures, quizzes, …), Hall (coffee breaks, welcome cocktail, farewell party), Hall + Mezzanine (poster session)
_at_LPSC **LPSC:** Amphitheater (welcome and lectures), Hall + Cafeteria (coffee breaks)

Week 1: 26th February – 1st March

	Monday 26	Tuesday 27	Wednesday 28	Thursday 29	Friday 1
8:40 – 9:25 10' break **9:35 – 10:20**	_at_LPSC **8:30 – 9:00** **Welcome** _at_LPSC **9:00 – 10:40** Introduction to the science at large scale facilities: neutron, synchrotron and XFEL sources *Marc de Boissieu*	_at_LPSC Refresher lecture on crystallography (1/2) *Béatrice Grenier*	_at_LPSC X-ray optics and applications (2/2) *David Attwood*	_at_LPSC Neutrons: scattering and instrumentation (2/2) *Andrew Wildes*	_at_LPSC Introduction to X-ray Spectroscopies *Sakura Pascarelli*
10:20-10:50	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK
10:50 – 11:35 10' break **11:45 – 12:30**	**11:00 – 12:30** **ESRF / ILL badges distribution**	_at_LPSC Neutrons: scattering and instrumentation (1/2) *Andrew Wildes*	_at_LPSC Introduction to interactions of X-rays and neutrons with matter (2/2) *Andrew Harrison*	_at_LPSC Refresher lecture on crystallography (2/2) *Béatrice Grenier*	_at_LPSC Fundamentals of X-ray Absorption Fine Structure Spectroscopy *Sakura Pascarelli*
14:00 – 14:45 10' break **14:55 – 15:40**	_at_ESRF Introduction to interactions of X-rays and neutrons with matter (1/2) *Andrew Harrison*	_at_LPSC Introduction to Synchrotron Radiation, coherence, and the evolution to Free Electron Lasing (1/2) *David Attwood*	**ILL / ESRF visit**	**ILL / ESRF visit**	_at_ESRF XFELs and ultrafast applications *Sakura Pascarelli*
15:40-16:10	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK
16:10 – 16:55 10' break **17:05 – 17:50**	_at_ESRF **ESRF & ILL presentations** (45' each) **UGA presentation** (10')	_at_LPSC Basics of X-ray detectors; How do they work and how are they characterised? *Heinz Graafsma*	_at_ILL **16:10 – 16:25** UGA committments to equality and inclusion *Marine Delmotte & Lili Behiels* _at_ILL **16:30 – 18:10** **Quizz** on crystallography (1/2) *Béatrice Grenier*	_at_ILL **Quizz** on basics about neutron and X-ray radiations (1/2) *Organisers*	_at_ESRF ***16:00 – 18:00*** ***Poster session 1***
	_at_ESRF **18:15** **Welcome cocktail**				**19:30** **Ice breaking party**

SCHEDULE FOR SESSION A

Week 2: 4th – 8th March

	Monday 4	Tuesday 5	Wednesday 6	Thursday 7	Friday 8
8:40 – 9:25 10' break **9:35 – 10:20**	**_at_ILL** Introduction on Neutron and X-ray imaging *Alessandro Tengattini*	**9:00 – 12:30** ***ESRF PRACTICALS*** *(in small groups)*	**9:00 – 12:30** ***ESRF PRACTICALS*** *(in small groups)*	**_at_ILL** Hard X-ray optics for SR beamlines *Ray Barrett*	**_at_ILL** Introduction to neutron and X-ray inelastic scattering *Christiane Alba-Simionesco*
10:20-10:50	**COFFEE BREAK**			**COFFEE BREAK**	**COFFEE BREAK**
10:50 – 11:35 10' break **11:45 – 12:30**	**_at_ILL** Small angle scattering *Martin Müller*			**_at_ILL** X-ray and Neutron Reflectometry *Frank Schreiber*	**_at_ILL** Data science: from big & open data to cloud computing *Vincent Favre-Nicolin*
14:00 – 14:45 10' break **14:55 – 15:40**	**_at_ILL** X-ray Photon Correlation Spectroscopy *Gerhard Grübel*	**14:00 – 17:30** ***ESRF PRACTICALS*** *(in small groups)*	**14:00 – 17:30** ***ESRF PRACTICALS*** *(in small groups)*	**_at_ILL** **14:00 – 14:45** From a diffraction experiment to the crystal structure *Marc de Boissieu* **_at_ILL** **14:55 – 15:40** **Quizz** on crystallography (2/2) *Claire Colin & Béatrice Grenier*	**_at_ILL** **Quizz** on basics about neutron and X-ray radiations (2/2, session A) *Organisers*
15:40-16:10	**COFFEE BREAK**			**COFFEE BREAK**	**COFFEE BREAK**
16:10 – 16:55 10' break **17:05 – 17:50**	**_at_ILL** Powder diffraction analysis in reciprocal and direct space *Radovan Cerny*			**_at_ESRF** **16:00 – 18:00** ***Poster Session 2*** **18:15 – 18:30** ***Poster awards***	**_at_ILL** ***"How to write a good proposal"*** *Organisers*

SCHEDULE FOR SESSION A

Week 3: 11th –15th March: 'Outside' Grenoble

Week 4: 18th – 22nd March

	Monday 18	Tuesday 19	Wednesday 20	Thursday 21	Friday 22
8:40 – 9:25 10' break **9:35 – 10:20**	_at_ILL Introduction to magnetism *Luigi Paolasini*	_at_ILL Magnetic neutron diffraction *Navid Qureshi*	**9:00 – 12:30** ***ILL PRACTICALS*** *(in small groups)*	_at_ILL Polarized X-rays *Urs Staub*	_at_ILL Coherent diffractive imaging and ptychography *Manuel Guizar-Sicairos*
10:20-10:50	COFFEE BREAK	COFFEE BREAK		COFFEE BREAK	COFFEE BREAK
10:50 – 11:35 10' break **11:45 – 12:30**	_at_ILL Neutron triple axis spectroscopy *Bella Lake*	_at_ILL Neutron time of flight spectroscopy *Toby Perring*		_at_ILL High resolution inelastic X-ray scattering *Matthieu Le Tacon*	_at_ILL Neutron backscattering and spin-echo spectroscopies *Orsolya Czakkel*
14:00 – 14:45 10' break **14:55 – 15:40**	_at_ILL Serial (femtosecond) crystallography *Thomas Barends*	_at_ILL Polarized neutrons: theoretical and experimental techniques for the study of atomic, molecular and nanoscale systems *Sean Langridge*	**14:00 – 17:30** ***ILL PRACTICALS*** *(in small groups)*	_at_ILL Full-field Coherent Imaging *Peter Cloetens*	**14:00 – 17:30** ***TUTORIALS / LABS*** *(in small groups)*
15:40-16:10	COFFEE BREAK	COFFEE BREAK		COFFEE BREAK	
16:10 – 16:55 10' break **17:05 – 17:50**	_at_ILL Science at neutron spallation sources: exploiting accelerator based facilities *Sean Langridge*	_at_ILL Magnetic X-ray and neutron reflectivity *Björgvin Hjörvarsson*		_at_ILL **16:10 – 16 :40** DECTRIS presentation *Sofia Trampari*	

SCHEDULE FOR SESSION A

Week 5: 25th – 29th March

	Monday 25	Tuesday 26	Wednesday 27	Thursday 28
8:40 – 9:25 10' break **9:35 – 10:20**	_at_ILL Resonant diffraction *Vincent Favre-Nicolin*	_at_ILL *Materials for energy* *Sandrine Lyonnard*	_at_ILL Photoelectron spectroscopy from UV to soft X-rays *Hugo Dil*	_at_ESRF X-ray photoemission electron microscopy *Claus Schneider*
10:20-10:50	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK
10:50 – 11:35 10' break **11:45 – 12:30**	_at_ILL Disorder and its effects on neutron and X-ray diffraction *Marc de Boissieu*	_at_ILL PDF-analysis of disordered materials *Adrian Barnes*	_at_ILL Solving surface problems using SR techniques *Alessandro Coati*	_at_ESRF Soft condensed matter *Adrian Rennie*
14:00 – 14:45 10' break **14:55 – 15:40**	**14:00 – 17:30** ***TUTORIALS / LABS / GROUP WORKS*** *(in small groups)*	**14:00 – 17:30** ***TUTORIALS / LABS*** *(in small groups)*	**14:00 – 17:30** ***TUTORIALS / LABS / GROUP WORKS*** *(in small groups)*	_at_ESRF The role of the scientist in making data FAIR for reproducible science *Andy Götz*
				COFFEE BREAK
16:10 – 17:50				_at_ESRF **EVALUATION MEETING**
				_at_ESRF **18:00 – 20:30** **Farewell party**

PRACTICALS / LABS / TUTORIALS FOR SESSION A

Full-time participants only

Coordinators: Alejandro FERNANDEZ-MARTINEZ, Béatrice GRENIER, Fabrice WILHELM

Part-time participants will not participate at all in week 3 and in practicals / labs / tutorials organised by Grenoble. This section concerns only the **full-time participants**.

During **weeks 2, 4, and 5**, organised by **Grenoble**, all full-time participants will carry out **practicals**[1] at Institut Laue Langevin (ILL) and European Synchrotron Radiation Facility (ESRF). In addition, they will participate in **tutorials**[2] and, for some of the participants, in **labs**[3], at ESRF, ILL, Centre National de la Recherche Scientifique (CNRS), and XENOCS. Last, a few participants will work in small groups on data brought by one student of the group (**group work**), with the help of an "expert" from the technique involved.

All full-time participants will follow additional practicals / tutorials during **week 3**, spent at one of the following partner facilities: **ALBA, Elettra / FERMI, KIT, SOLEIL**. For each of these four destinations, the participants have been distributed in groups of 3 or 4 (groups A1, A2, ... at each site). See the '**PROGRAMME OF PARTNER**' section for the detailed programme there.

As concerns practicals / labs / tutorials in the programme of Grenoble, no fixed groups were made, but rather an individual and personalised schedule. Therefore, we assigned a number to each participant (a01 to a48), for a better readability in the tables that will follow. All the information regarding **groups A1, A2, …** and the **numbering a01, a02, …** can be found in the '**PRACTICAL INFORMATION**' section of this booklet (p19 - p20).

The complete individual schedule can also be found on a separate PDF document and in **MY SCHEDULE** on the Hercules website: https://hercules-school.eu/my-dashboard (once connected). The summaries of the various practicals / labs / tutorials are also available there.

The complete practicals / labs / tutorials schedule was done in the best possible way (regarding the many constraints) with respect to the main research interests and wishes expressed. Some hands-on training on completely different techniques and/or subjects were also assigned, in order to expand your skills. Each full-time participant will perform selected practicals, labs, and/or tutorials, as indicated in the following.

All full-time participants are required to attend the entire practical / lab / tutorial programme assigned to them

[1] ***Practical**: hands-on training on large scale facility instruments;*
[2] ***Lab**: hands-on training on laboratory experiments ;*
[3] ***Tutorial**: data treatment (on synchrotron or neutron data recorded beforehand) or, for a few of them, simulations.*

Practicals at ESRF

Meeting point on the mezzanine of ESRF central building 15 min. earlier

5th and 6th MARCH, 9:00 – 12:30 and 14:00 – 17:30

			5th March		6th March	
BEAMLINE	INSTRUCTOR(S)	TITLE	9:00	14:00	9:00	14:00
BM02	BEUTIER Guillaume, CHAHINE Gilbert	Forbidden reflections in a Germanium single crystal	a25 a34 a41 a47	a15 a18 a30 a31	a02 a29 a42 a46	a14 a28 a35 a37
BM08-LISA	D'ACAPITO Francesco, PURI Alessandro, ORSILLI Jacopo	Practical introduction to the EXAFS technique	a09 a10 a22 a23	a26 a28 a29 a42	a04 a07 a11 a21	a02 a03 a17 a36
BM20	KVASHNINA Kristina, HENNIG Christoph, MEURER Florian	Single crystal structure determination / chemical crystallography			a27 a33 a43	a10 a19 a38
BM25-SpLine (1)	CERVERA GABALDA Laura, GALARRETA RODRIGUEZ Itziar	High resolution powder diffraction and X-ray absorption spectroscopy	a14 a19 a27 a43	a01 a05 a12 a46		
BM25-SpLine (2)	GARCIA PRIETO Ana	Thin film X-ray Diffraction			a10 a18 a25 a30	a29 a32 a34 a47
BM26	ROSENTHAL Martin	Synchrotron based Small and Wide angle X-ray scattering for in-situ experimentation			a08 a12 a15 a34 a35	a04 a05 a20 a24 a30
BM32 align	MARTINELLI Lucio, PRABHU Mahesh Krishna	Grazing incidence X-rays diffraction for surfaces studies	a08 a17 a28 a44			
BM32	MARTINELLI Lucio, PRABHU Mahesh Krishna	Grazing incidence X-rays diffraction for surfaces studies		a14 a27 a35 a48		
ID01 (1)	ZATTERIN Edoardo, CORLEY-WICIAK Cédric	Scanning X-ray Diffraction Microscopy	a03 a04 a13 a16			a11 a22 a33 a44
ID01 (2)	LEAKE Steven, ZHAO Jiangtao	Wavefront reconstruction and Bragg coherent diffraction imaging		a17 a34 a40 a47	a09 a20 a36 a48	
ID03	RODRIGUEZ-LAMAS Raquel	Dark field X ray Microscopy - Full field diffraction imaging	a05 a38 a39 a46	a04 a09 a25 a37	a26 a32 a40 a41	a01 a08 a27 a31
ID11	FANG Haixing	Diffraction tomography based techniques			a06 a13 a31 a44	a12 a18 a39 a45
ID12	WILHELM Fabrice	Hard X-ray XMCD	a29 a36 a37 a42	a10 a19 a32 a43		
ID15B	GARBARINO Gaston, HANFLAND Michael	Crystallography in a diamond anvil cell	a02 a07 a11 a18	a16 a36 a41	a19 a22 a39 a45	a21 a26 a43 a46
ID16A	KARPOV Dmitry	Synchrotron-based X-ray nanotomography			a03 a14 a28 a47	a07 a23 a41 a48
ID19	RACK Alexander, BROCHE Ludovic	Synchrotron-based microtomography			a01 a05 a16 a24	a15 a25 a40 a42
ID21	CASTILLO MICHEL Hiram	Synchrotron microXRF and microXAS data acquisition and analysis			a17 a37 a23 a38	a06 a09 a13 a16
ID22	FITCH Andy, GAINZA MARTIN Javier, HE Meng	High resolution powder diffraction	a12 a15 a24 a33	a20 a21 a22 a23		
ID26	GLATZEL Pieter, VASALA Sami, PAIDI Vinod, SHEATH Bradley	Aligning an X-ray emission spectrometer	a06 a20 a26 a45	a02 a03 a07 a38		
ID27	MEZOUAR Mohamed, PAKHOMOVA Anna, GERIN Max, WEHINGER Bjorn	Crystallography in a diamond anvil cell	a30 a32 a35 a48	a06 a24 a33 a44		
ID31	SARTORI Andrea, DRNEC Jakub	Synchrotron based small angle and PDF analysis for in-situ experimentation	a01 a21 a31 a40	a08 a11 a13 a39 a45		

Practicals at ILL

Meeting point in the hall of ILL4 building 10 min. earlier

NEUTRONS FOR SOCIETY

20th MARCH, 9:00 – 12:30 and 14:00 – 17:30

INSTRUMENT	INSTRUCTOR(S)	TITLE	20th March 9:00	20th March 14:00
D1B (1)	COLIN Claire, LAVERSENNE Laetitia	Structural determination of energy materials by Neutron Powder Diffraction	a08 a13 a34 a40	
D1B (2)	NASSIF Vivian, PUENTE ORENCH Inés	Diffraction of nanoparticles		a03 a04 a10 a48
D9	RODRIGUEZ VELAMAZAN José Alberto, FABELO Oscar	Single crystal nuclear and magnetic diffraction		a02 a18 a38 a42
D19	CANADILLAS DELGADO Laura	Single crystal measurements on the thermal neutron diffractometer D19	a16 a21 a25 a28	a11 a39 a41 a45
D20	HANSEN Thomas	Magnetic powder neutron diffraction	a02 a30 a38 a43	a24 a35 a36 a37
D33	STEINKE Nina-Juliane	small angle neutron scattering from nm sized objects	a03 a04 a12 a27	a01 a06 a09 a34
FIGARO	GUTFREUND Philipp	Neutron reflectometry for thin film investigations	a05 a11 a17 a45	a15 a23 a27 a40
IN1-Lagrange	JIMENEZ-RUIZ Monica	Neutron Vibrational Spectroscopy	a07 a09 a15 a42	a05 a14 a16 a20
IN5	PETIT Sylvain, ZANOTTI Jean-Marc	Spectroscopy of Mn12	a18 a24 a35 a46	a19 a29 a30 a33
IN8	IVANOV Alexandre	Measurements of collective excitations in single crystals on a thermal three-axis spectrometer	a14 a26 a33 a36	a22 a32 a43 a44
IN16B	APPEL Markus, SEYDEL Tilo	High resolution spectroscopy on cold neutron backscattering spectrometers	a10 a23 a29 a37	
NeXT	TENGATTINI Alessandro, HELFEN Lukas	Neutron and X-ray Tomography and Image processing	a06 a31 a39 a41	a08 a13 a17 a47
Panther	KOZA Michael Marek	Vibrational and relaxational properties in thermoelectric materials	a20 a44 a47 a48	a07 a25 a26 a31
WASP	FOUQUET Peter	Neutron Spin-Echo Spectroscopy	a01 a19 a22 a32	a12 a21 a28 a46

Additional information about the ESRF and ILL practicals:

You will be contacted by your instructor in case you should bring your laptop and install some particular software beforehand. Also check this information in MY SCHEDULE on the Hercules website.

You can find information on the various **ESRF beamlines** and **ILL instruments** at the following URLs:
https://www.esrf.fr/home/UsersAndScience/find-a-beamline.html
https://www.ill.eu/users/instruments/instruments-list

Meeting points: see next page

Tutorials, Labs, and Group Works

22nd, 25th, 26th, and 27th MARCH, 14:00 – 17:30

TUTORIAL/LAB	INSTRUCTOR(S)	TITLE	LOCATION	22nd March	25th March	26th March	27th March
Bilbao THz	DE BRION Sophie	Introduction to symmetries using Bilbao Crystallographic server. Applications in the THz domain.	ILL		a02 a18 a19 a30 a43 a46		
CDI ptycho	FAVRE-NICOLIN Vincent	Coherent imaging data analysis (CDI, Ptychography, holo-tomography) using PyNX	ESRF				a04 a12 a40 a47
Darfix	RODRIGUEZ-LAMAS Raquel	darfix- Data treatment for Dark field X ray microscopy and other imaging techniques	ESRF	a04 a08 a09 a40 a41	a27 a32 a37 a44		
DIF TOMO	FANG Haixing	Grain map reconstruction from diffraction contrast tomography	ESRF	a12 a13 a31 a44 a45			
GSAS	TOBY Brian (ZOOM)	Introduction to GSAS-II	ILL	a05 a10 a11 a15 a16 a23			a08 a13 a34 a44 a45
JANA	PETRICEK Vaclav, POUPON Morgane (ZOOM)	Refinement of crystal structures in Jana2020	SB				a06 a20 a22 a28 a48
JANA mag	HENRIQUES Margarida, PETRICEK Vaclav (ZOOM)	Refinement of magnetic structures in Jana2020	ILL				a24 a30 a32 a36 a43
MAG DIF	PADDISON Joseph (ZOOM)	Magnetic diffuse scattering	ILL			a02 a18 a24 a33 a43	
Mag2Pol	QURESHI Navid	Neutron and x-ray diffraction data analysis using Mag2Pol	ILL	a18 a19 a29 a37 a38 a46			
McStas	WEBER Tobias	Simulating neutron scattering using McStas	ILL			a01 a22 a30 a35 a46	
micro LAUE	MICHA Jean-Sébastien	Laue microdiffraction	ESRF	a25 a28 a39 a42 a43	a06 a08 a14 a16 a22 a41	a04 a09 a13 a27 a31 a41	
OASYS	SANCHEZ DEL RIO Manuel	Modelling synchrotron radiation beamlines with Oasys	ESRF	a14 a17 a20 a36 a47			
PDF-CT	CHECCHIA Stefano	Pair Distribution Function Computed Tomography (PDF-CT)	ESRF	a03 a06 a26 a33 a34			

TUTORIAL/LAB	INSTRUCTOR(S)	TITLE	LOCATION	22nd March	25th March	26th March	27th March
Ptycho Tomo	DA SILVA Julio Cesar	PXCT - Ptychographic X-ray Computed Tomography	ESRF			a07 a15 a16 a25 a34 a36 a38	
PyFAI	KIEFFER Jerome	Scattering data: calibration and reduction with pyFAI (covers SAS, powder diffraction and PDF)	ESRF			a03 a05 a17 a28	
QENS	BERROD Quentin	Ion diffusion in electrolytes for batteries : QENS data analysis	ILL	a01 a02 a22 a35 a48	a20 a21 a23 a29 a33		
RIXS	NICOLAOU Alessandro, POREE Victor (ZOOM on 22 March)	Resonant inelastic X-ray scattering in the soft X-ray regime for quantum materials	ILL	a07 a21 a24 a27 a30 a32	a11 a12 a26 a35 a39 a45		a09 a15 a17 a38 a42
SAXS WAXS lab	GIACOBBE Carlotta, PANINE Pierre, LASSENBERGER Andrea	SAXS WAXS experiment in the lab.	XENOCS				a10 a23 a26 a37
TAS	BOUNOUA Dalila	Phonon dispersion in CaF2	ILL				a07 a18 a19 a29 a46
Vlab	BRESSLER Christian	Time-Resolved X-Ray Emission Spectroscopy and Diffraction with an XFEL	ESRF			a10 a11 a12 a39 a42	
XAS 1	JOLY Yves	X-ray absorption simulations	ESRF			a06 a08 a20 a21 a23	
XAS 2	RETEGAN Marius	X-ray spectroscopy calculations using multiplet approaches	ESRF		a03 a13 a24 a34 a42 a47	a14 a19 a26 a29 a40 a48	
XPD lab	LEYNAUD Olivier	X-Ray Powder Diffraction and/or 4-circles Single Crystal Diffraction	CNRS			a32 a37 a44 a45 a47	a05 a11 a14 a31 a41
XSCD lab	COURTOIS Pierre, PHILIT Florian	Hard X-Ray single crystal diffractometer	ILL		a01 a04 a09 a40		a16 a25 a27 a39

GROUP WORK	EXPERT	TITLE	LOCATION	22nd March	25th March	26th March	27th March
GW NPD/XPD	RODRIGUEZ-CARVAJAL Juan	Group work on POWDER DIFFRACTION data	ILL				a01 **a02 a03** a21 a33 **a35**
GW TOMO	CHECCHIA Stefano	Group work on TOMOGRAPHY data	ESRF		a17 a25 a28 a31 **a48**		
GW XANES	D'ACAPITO Francesco	Group work on XANES data	ESRF		a05 a07 a10 **a15** a36 **a38**		

TUTORIALS:
For some tutorials, you will need to **install specific software beforehand**, to be able to do the data treatment. In that case, your instructor will send you an email before the tutorial and/or will give this information in the summary of the tutorial on the Hercules website. **If you have no computer or do not have the required OS system** for a particular tutorial, you may either share a laptop with another participant or borrow a PC Windows laptop, assuming there is still one available (**send an email to grenier_at_ill.fr at least one week in advance**).

NB: - the **micro LAUE** tutorials will take place in a room equipped with PC Windows computers.
- the **PDF-CT** tutorial will include a visit of the ID15A beamline at ESRF.
- the few tutorials will take place on **Zoom**, in a room equipped with videoconferencing system. **Your presence on site is mandatory!**

GROUP WORKS:
Some full-time participants will participate in a group work. During the group work session, the participants bringing their data will first make a short presentation (purpose of the measurement, experiment done, explanation of their data, problems to solve, …), then they will share their data with the rest of the group and you will work together on the data treatment. Experts from this field will also be present to explain some data treatment and/or try to answer questions about your data analysis. The reference number of the participants bringing their data is enlightened in **bold blue**.

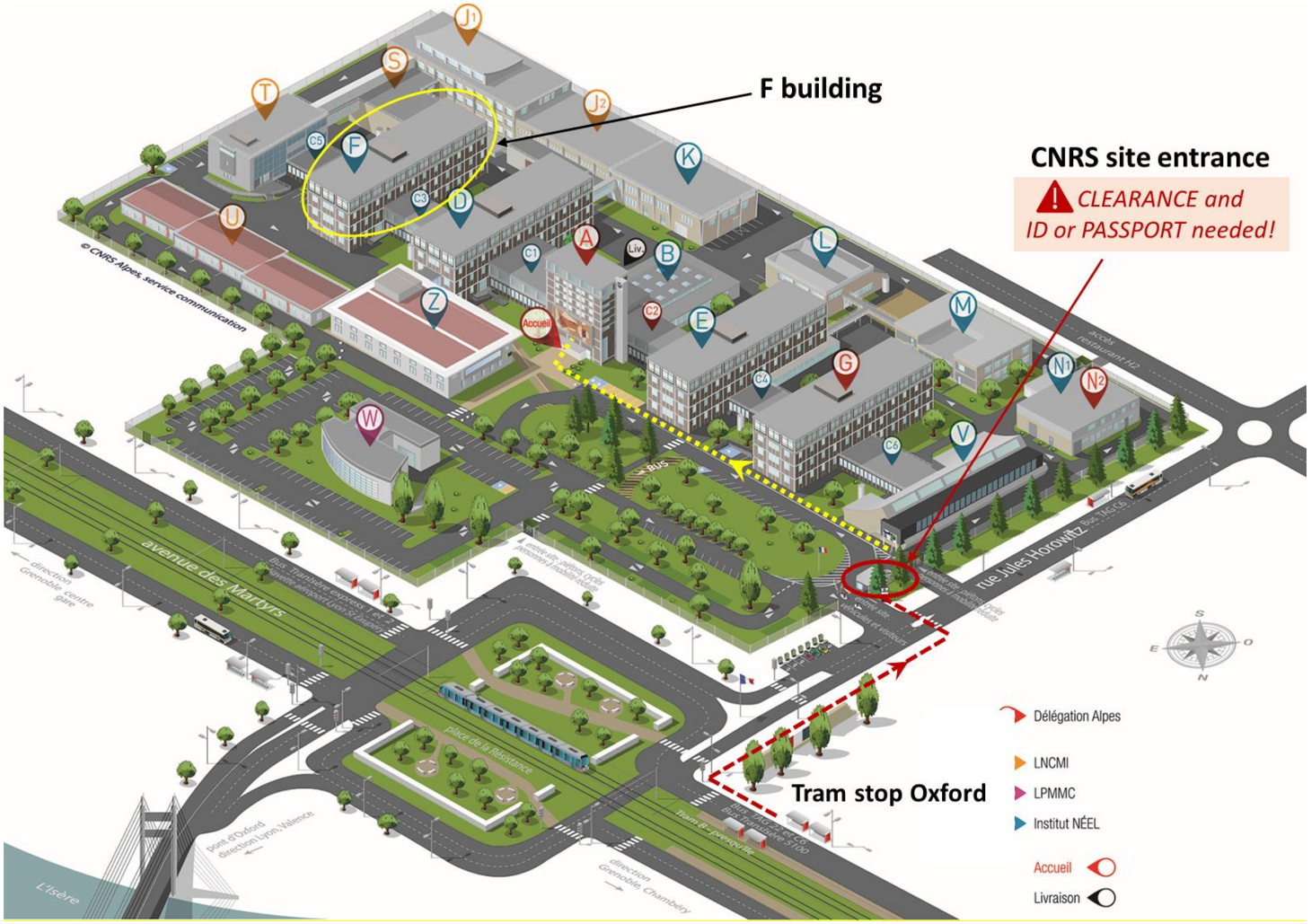
Meeting points, at 13:50, for the tutorials, labs, and group works:

Location 'ILL': **Hall of ILL4 building**
Location 'ESRF': **Hall of ESRF central building**
Location 'SB': **Entrance hall of the Science Building** (SB)

Location 'XENOCS': **Entrance of the XENOCS building**
→ located on avenue des Martyrs, in front of the Oxford tram stop, opposite to the LPSC
Careful: it should take about 10 minutes to get there from the EPN campus

Location 'CNRS': **Go directly to room F217**
→ see map on page 31 ; sign posting from the ground floor of F building)
Careful: all together, it should take at least 15 minutes to get there from the EPN campus

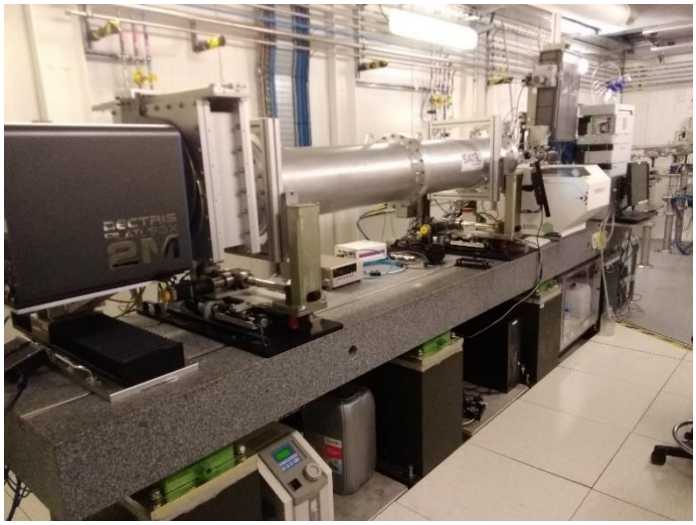
Clearance + passport or ID
needed at the CNRS site entrance



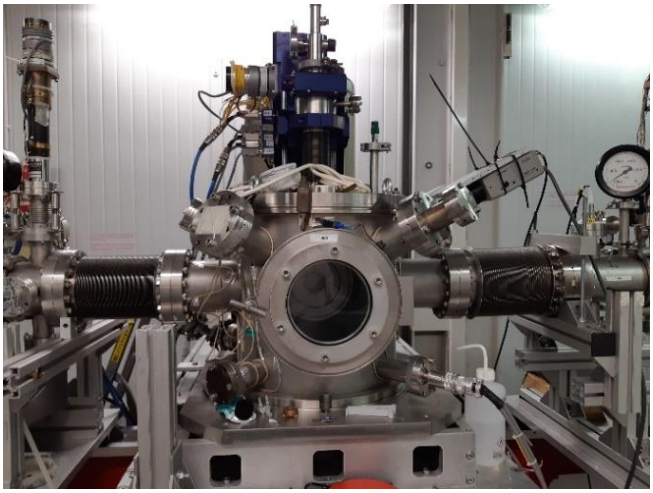
Map of the CNRS site (for XPD lab)

To reach the hall of the F building, enter in the A building, take the stairs on the left of the welcome desk, then walk through the long corridor to the left direction, until you reach the F building. You will see a sign posting from there to the F217 room.

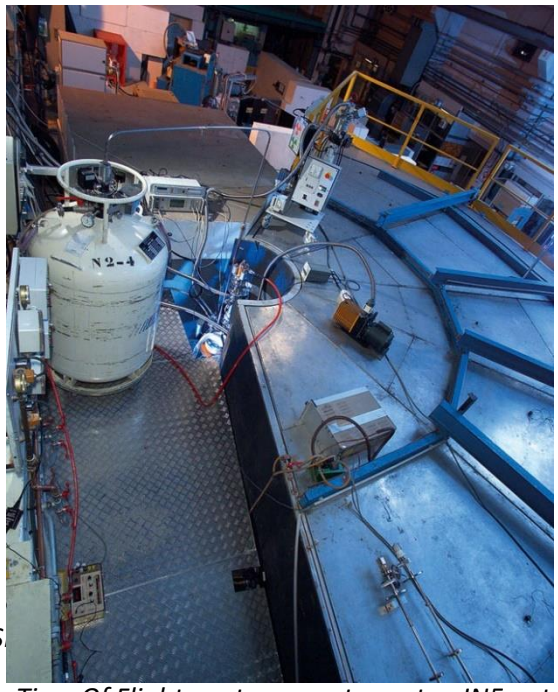
Small Angle Neutron Scattering, D11 _at_ ILL



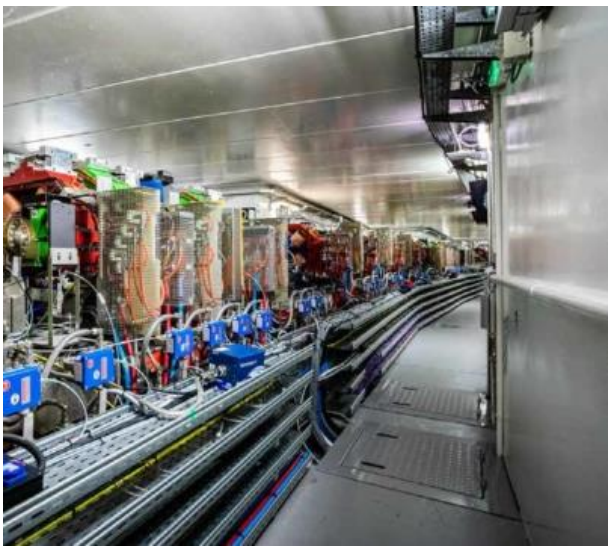
Small angle X-ray scattering, BM29 _at_ ESRF

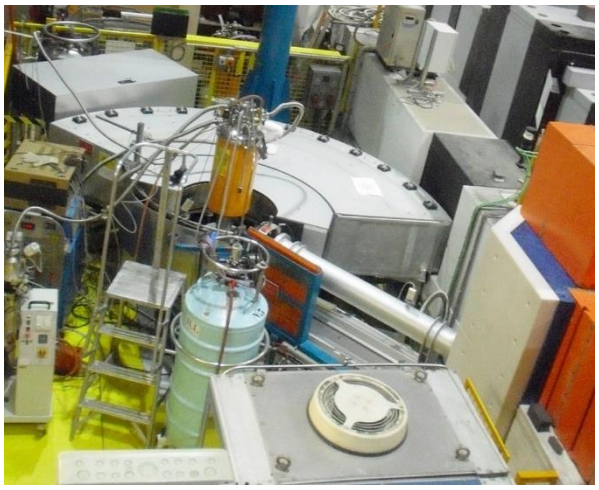


Extended X-ray Absorption Fine Structure, BM08 _at_ ES



*Time Of Flight neutron spectrometry, IN5 _at_*





EBS storage ring _at_ ESRF

Powder Neutron Diffraction, D1B _at_ ILL

PROGRAMME of GRENOBLE

SCHEDULE FOR SESSION B

Last update 12/02/2024

Common lectures

Session B lectures

Other

_at_ILL **ILL4 building:** Chadwick amphitheater (lectures, quizzes, …), Hall (coffee breaks)

_at_ILL(2) **ILL4 building:** Seminar room Isabelle Grillo, 1st floor (lectures and 1 quizz), Hall (coffee breaks)

_at_CIBB **CIBB building:** Seminar room CIBB, 2nd floor (lectures), Hall ILL4 or ESRF (coffee breaks → see planning session A)

_at_ESRF **ESRF central building:** Auditorium (lectures, quizzes, …), Hall (coffee breaks, welcome cocktail, farewell party), Hall + Mezzanine (poster session)

_at_LPSC **LPSC:** Amphitheater (welcome and lectures), Hall + Cafeteria (coffee breaks)

Week 1: 26th February – 1st March

	Monday 26	Tuesday 27	Wednesday 28	Thursday 29	Friday 1
8:40 – 9:25 10' break 9:35 – 10:20	_at_LPSC **8:30 – 9:00** **Welcome** _at_LPSC **9:00 – 10:40** Introduction to the science at large scale facilities: neutron, synchrotron and XFEL sources *Marc de Boissieu*	_at_LPSC Refresher lecture on crystallography (1/2) *Béatrice Grenier*	_at_LPSC X-ray optics and applications (2/2) *David Attwood*	_at_LPSC Neutrons: scattering and instrumentation (2/2) *Andrew Wildes*	_at_LPSC Introduction to X-ray Spectroscopies *Sakura Pascarelli*
10:20-10:50	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK
10:50 – 11:35 10' break 11:45 – 12:30	**11:00 – 12:30** **ESRF / ILL badges distribution**	_at_LPSC Neutrons: scattering and instrumentation (1/2) *Andrew Wildes*	_at_LPSC Introduction to interactions of X-rays and neutrons with matter (2/2) *Andrew Harrison*	_at_LPSC Refresher lecture on crystallography (2/2) *Béatrice Grenier*	_at_LPSC Fundamentals of X-ray Absorption Fine Structure Spectroscopy *Sakura Pascarelli*
14:00 – 14:45 10' break 14:55 – 15:40	_at_ESRF Introduction to interactions of X-rays and neutrons with matter (1/2) *Andrew Harrison*	_at_LPSC Introduction to Synchrotron Radiation, coherence, and the evolution to Free Electron Lasing (1/2) *David Attwood*	**ILL / ESRF visit**	**ILL / ESRF visit**	_at_ESRF XFELs and ultrafast applications *Sakura Pascarelli*
15:40-16:10	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK
16:10 – 16:55 10' break 17:05 – 17:50	_at_ESRF **ESRF & ILL presentations** (45' each) **UGA presentation** (10')	_at_LPSC Basics of X-ray detectors; How do they work and how are they characterised? *Heinz Graafsma*	_at_ILL **16:10 – 16:25** UGA committments to equality and inclusion *Marine Delmotte & Lili Behiels* _at_ILL **16:30 – 18:10** **Quizz** on crystallography (1/2) *Béatrice Grenier*	_at_ILL **Quizz** on basics about neutron and X-ray radiations (1/2) *Organisers*	_at_ESRF ***16:00 – 18:00*** ***Poster session 1***
	_at_ESRF **18:15** **Welcome cocktail**				**19:30** **Ice breaking party**

SCHEDULE FOR SESSION B

Week 2: 4th – 8th March

	Monday 4	Tuesday 5	Wednesday 6	Thursday 7	Friday 8
8:40 – 9:25 10' break **9:35 – 10:20**	**_at_ILL** Introduction on Neutron and X-ray imaging *Alessandro Tengattini*	**9:00 – 12:30** ***ESRF PRACTICALS*** *(in small groups)*	**9:00 – 12:30** ***ESRF PRACTICALS*** *(in small groups)*	**_at_ILL** Hard X-ray optics for SR beamlines *Ray Barrett*	**_at_ILL** Introduction to neutron and X-ray inelastic scattering *Christiane Alba-Simionesco*
10:20-10:50	**COFFEE BREAK**		COFFEE BREAK	**COFFEE BREAK**	**COFFEE BREAK**
10:50 – 11:35 10' break **11:45 – 12:30**	**_at_ILL** Small angle scattering *Martin Müller*			**_at_ILL(2)** Coherent X-rays for colloidal matter *Anders Madsen*	**_at_ILL** Data science: from big & open data to cloud computing *Vincent Favre-Nicolin*
14:00 – 14:45 10' break **14:55 – 15:40**	**_at_ILL(2)** Protein crystallography: data collection and reduction, phasing *Marc Roe*	**14:00 – 17:30** ***ESRF PRACTICALS*** *(in small groups)*	**14:00 – 17:30** ***ESRF PRACTICALS*** *(in small groups*	**_at_ILL** **14:00 – 14:45** From a diffraction experiment to the crystal structure *Marc de Boissieu* **_at_ILL** **14:55 – 15:40** **Quizz** on crystallography(2/2) *Claire Colin & Béatrice Grenier*	**_at_ILL(2)** **Quizz** on basics about neutron and X-ray radiations (2/2, session B) *Organisers*
15:40-16:10	**COFFEE BREAK**			**COFFEE BREAK**	**COFFEE BREAK**
16:10 – 16:55 10' break **17:05 – 17:50**	**_at_ILL(2)** Electron microscopy for structural biology *Allison Ballandras-Colas*			**_at_ESRF** **16:00 – 18:00** ***Poster Session 2*** **18:15 – 18:30** ***Poster awards***	**_at_ILL** ***"How to write a good proposal"*** *Organisers*

SCHEDULE FOR SESSION B

Week 3: 11th –15th March: 'Outside' Grenoble

Week 4: 18th – 22nd March

	Monday 18	Tuesday 19	Wednesday 20	Thursday 21	Friday 22
8:40 – 9:25 10' break **9:35 – 10:20**	**_at_ILL(2)** X-ray and neutron reflectometry in biophysics *Yuri Gerelli*	**9:00 – 12:30** ***ILL PRACTICALS*** *(in small groups)*	**_at_ILL(2)** Solution X-ray Scattering from Biological Macromolecules *Véronique Bréchot*	**_at_ILL(2)** Neutron Spectroscopy as a Tool to Understand Dynamics in Soft Matter *Victoria Garcia Sakai*	**_at_ILL(2)** Crystallization of biological macromolecules: Theoretical and practical aspects of crystallization in solution *Monika Spano*
10:20-10:50	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK
10:50 – 11:35 10' break **11:45 – 12:30**	**_at_ILL(2)** Neutron macromolecular crystallography *Matthew Blakeley*		**_at_ILL(2)** Native mass spectrometry *Elisabetta Boeri Erba*	**_at_ILL(2)** Radiation damage in protein crystallography *Martin Weik*	**_at_ILL(2)** Structural dynamics by time resolved X-ray solution scattering *Giorgio Schirò*
14:00 – 14:45 10' break **14:55 – 15:40**	**_at_ILL** Serial (femtosecond) crystallography *Thomas Barends*	**14:00 – 17:30** ***ILL PRACTICALS*** *(in small groups)*	**_at_ILL(2)** Biological Small Angle Neutron Scattering *Frank Gabel*	**_at_ILL** Full-field Coherent Imaging *Peter Cloetens*	**14:00 – 17:30** ***TUTORIALS / LABS*** *(in small groups)*
15:40-16:10	COFFEE BREAK		COFFEE BREAK	COFFEE BREAK	
16:10 – 16:55 10' break **17:05 – 17:50**	**_at_ILL** Science at neutron spallation sources: exploiting accelerator based facilities *Sean Langridge*		**_at_ILL(2)** Nuclear Magnetic Resonance *Martin Blackledge*	**_at_ILL** **16:10 – 16:40** DECTRIS presentation *Sofia Trampari*	

SCHEDULE FOR SESSION B

Week 5: 25th – 29th March

	Monday 25	Tuesday 26	Wednesday 27	Thursday 28
8:40 – 9:25 10' break **9:35 – 10:20**	_at_CIBB Protein Dynamics by Neutron Scattering and Dynamics of Macromolecules *Giuseppe Zaccai*	_at_CIBB Biomedical imaging with Synchrotron Radiation *Giuliana Tromba*	_at_CIBB **9:20 – 10:20** Biomolecular deuteration for neutron structural biology and dynamics *Trevor Forsyth*	_at_CIBB X-ray spectroscopy *Serena De Beer*
10:20-10:50	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK	COFFEE BREAK
10:50 – 11:35 10' break **11:45 – 12:30**	_at_CIBB Super-resolution microscopy: a revolution in biological imaging *Dominique Bourgeois*	_at_CIBB Coherent diffraction imaging and ptychography for soft condensed matter and biology *Chris Jacobsen*	_at_CIBB **10:50 – 11:50** Introduction to current trends and challenges of molecular and structural biology *Claude Sauter*	_at_CIBB Integrative biology *Annalisa Pastore*
14:00 – 14:45 10' break **14:55 – 15:40**	**14:00 – 17:30** ***TUTORIALS / LABS*** *(in small groups)*	**14:00 – 17:30** ***TUTORIALS / LABS*** *(in small groups)*	**14:00 – 17:30** ***TUTORIALS / LABS*** *(in small groups)*	_at_ESRF TBD *Andy Götz*
				COFFEE BREAK
16:10 – 17:50				_at_ESRF **EVALUATION MEETING**
				18:00 – 20:30 **Farewell party**

PRACTICALS / LABS / TUTORIALS FOR SESSION B

Full-time participants only

Coordinators: BALLANDRAS-COLAS Allison, Béatrice GRENIER, Petra PERNOT, Sylvain PREVOST, Giorgio SCHIRO

Part-time participants will not participate at all in week 3 and in practicals / labs / tutorials organised by Grenoble. This section concerns only the **full-time participants**.

During **weeks 2, 4, and 5**, organised by **Grenoble**, all full-time participants will carry out **practicals**[1] at Institut Laue Langevin (ILL) and European Synchrotron Radiation Facility (ESRF). In addition, they will participate in **tutorials**[2] and in **labs**[3] at ESRF, ILL, Institut de Biologie Structurale (IBS), and XENOCS. Last, a few participants will work in small groups on data brought by one student of the group (**group work**), with the help of an "expert" from the technique involved.

All full-time participants will follow additional practicals / tutorials during **week 3**, spent at one of the following partner facilities: **ALBA, Elettra / FERMI, KIT, SOLEIL**. For each of these four destinations, the participants have been distributed in groups of 4 (groups B1, B2, or B, at each site). See the '**PROGRAMME OF PARTNER**' section for the detailed programme there.

As concerns practicals / labs / tutorials in the programme of Grenoble, no fixed groups were made, but rather an individual and personalised schedule. Therefore, we assigned a number to each participant (b01 to b24), for a better readability in the tables that will follow. All the information regarding **groups B1, B2, B** and the **numbering b01, b02, …** can be found in the '**PRACTICAL INFORMATION**' section of this booklet (p19 – p20).

The complete individual schedule can also be found on a separate PDF document and in **MY SCHEDULE** on the Hercules website: https://hercules-school.eu/my-dashboard (once connected). The summaries of the various practicals / labs / tutorials are also available there.

The complete practicals / labs / tutorials schedule was done in the best possible way (regarding the many constraints) with respect to the main research interests and wishes expressed. Some hands-on training on completely different techniques and/or subjects were also assigned, in order to expand your skills. Each full-time participant will perform selected practicals, labs, and/or tutorials, as indicated in the following.

All full-time participants are required to attend the entire practical / lab / tutorial programme assigned to them

[1] ***Practical**: hands-on training on large scale facility instruments;*
[2] ***Lab**: hands-on training on laboratory experiments ;*
[3] ***Tutorial**: data treatment (on synchrotron or neutron data recorded beforehand) or, for a few of them, simulations.*

Practicals/Labs at ESRF and Labs at IBS

Meeting point on the mezzanine of ESRF central building 15 min. earlier

Meeting point in the hall of IBS building 10 min. ealier

5th and 6th MARCH, 9:00 – 12:30 and 14:00 – 17:30

			5th March		6th March	
BEAMLINE / LAB	INSTRUCTOR(S)	TITLE	9:00	14:00	9:00	14:00
BM05	FERNANDEZ Vincent, DOLLMAN Kathleen	Synchrotron-based microtomography	b02 b06 b12 b13	b01 b15 b19 b23	b14 b16 b22 b24	b03 b05 b09 b18 b20
BM07	MATHIEU Eric, ENGILBERGE Sylvain	Protein crystallography on BM07-FIP2	b10 b17 b21 b23	b02 b04 b08 b14	b01 b03 b05 b15 b20	b12 b13 b16 b19 b22
BM26	ROSENTHAL Martin	Synchrotron based Small and Wide angle X-ray scattering for in-situ experimentation	b01 b05 b09 b11	b07 b12 b13 b18		
BM29	TULLY Mark, CALIO Antonino	Macromolecule Small Angle Scattering with X-rays (BioSAXS)	b14 b20 b22 b24	b03 b05 b09 b16	b02 b12 b13 b18 b19 b23	b01 b04 b06 b07 b10
EM-1 Lab	BALLANDRAS-COLAS Allison, CHENAVIER Florian, ZARKADAS Eleftherios, JUYOUX Pauline	Grids preparation for Electron Microscopy	b04 b07 b08 b15	b10 b17 b21 b11		
EM-2 Lab	ZARKADAS Eleftherios, JUYOUX Pauline, BALLANDRAS-COLAS Allison, CHENAVIER Florian	Grids observation by Electron Microscopy			b04 b07 b08 b10	b15 b17 b21 b11
ID21	CASTILLO MICHEL Hiram	Synchrotron microXRF and microXAS data acquisition and analysis	b03 b16 b18 b19	b06 b20 b22 b24		
The icOS Lab	ROYANT Antoine, CARAMELLO Nicolas, ENGILBERGE Sylvain	In crystallo optical spectroscopy at the icOS Lab			b06 b09 b11 b17 b21	b02 b08 b14 b23 b24

EM-1 and EM-2 Labs will take place at IBS, while all other practicals/labs will take place at ESRF.

More information on next page.

Practicals at ILL

Meeting point in the hall of ILL4 building 10 min. earlier

NEUTRONS FOR SOCIETY

19th MARCH, 9:00 – 12:30 and 14:00 – 17:30

INSTRUMENT	INSTRUCTOR(S)	TITLE	19th March 9:00	19th March 14:00
D16	CRISTIGLIO Viviana	Small and wide angle high resolution neutron diffraction of biological and molecular solutions	b10 b11 b23 b21	b01 b02 b06 b08
D22	PRÉVOST Sylvain	Small angle neutron scattering: acquisition, reduction and analysis for self-assemblies and biomacromolecules	b01 b05 b09 b16	b04 b07 b14 b11
FIGARO	PARACINI Nicolò	Neutron reflectometry for thin film investigations	b06 b07 b14 b20	b13 b15 b16 b17
IN15	HOFFMANN Ingo	Basics of Neutron Spin Echo (NSE)	b12 b18 b22 b24	b03 b05 b20 b23
IN16B	PETERS Judith	Molecular dynamics probed by neutron spectroscopy	b03 b04 b13 b19	b12 b21 b24 b18
LADI-DALI	GAJDOS Lukas	Neutron macromolecular crystallography	b02 b08 b15 b17	b09 b10 b19 b22

Additional information about the ESRF, IBS, and ILL practicals/labs:

You will be contacted by your instructor in case you should bring your laptop and install some particular software beforehand. Also check this information in MY SCHEDULE on the Hercules website.

You can find information on the various **ESRF beamlines** and **ILL instruments** at the following URLs:
https://www.esrf.fr/home/UsersAndScience/find-a-beamline.html
https://www.ill.eu/users/instruments/instruments-list

Tutorials, Labs, and Group work

22nd, 25th, 26th, and 27th MARCH, 14:00 – 17:30

Meeting points: see next page

LAB/TUTORIAL	INSTRUCTOR(S)	TITLE	LOCATION	22nd March	25th March	26th March	27th March
AI	COQUELLE Nicolas	Development and use of artificial intelligence in Structural biology	IBS	b02 b05 b06 b08 b17 b22			b01 b10 b13 b14 b21 b11
BIOINF	GRUDININ Sergei, OLECHNOVIC Kliment	Structural Bioinformatics	CIBB			b02 b08 b10 b21 b11 b24	b15 b18 b19
CDI ptycho	FAVRE-NICOLIN Vincent	Coherent imaging data analysis (CDI, Ptychography, holo-tomography) using PyNX	ESRF		b01 b06 b23		
CRYST lab	SPANO Monika, HJORTH-JENSEN Samuel	Bio-macromolecular crystallization	IBS	b04 b15 b19 b23	b14 b17 b21 b22		
EMAPS	DE ZITTER Elke	Macromolecular model building and analysis in electron density maps using COOT	IBS	b10 b20 b21 b11			b02 b06 b08 b17
MOL DYN	PETERS Judith	Molecular dynamics probed by neutron spectroscopy	SB on 22/03 IBS on 26/03	b03 b12 b13 b18 b24		b01 b07 b15 b16 b17	
NMR lab	FAVIER Adrien, VALLET Alicia	Protein-Protein interaction binding site determination by NMR chemical shift mapping	IBS		b07 b08 b12 b13 b15		b03 b05 b16 b23
NSE	MALAYIL KALATHIL Firoz	Investigating diffusion in complex liquids by neutron spin echo	IBS			b12 b13 b18 b20 b22	
SANS	PRÉVOST Sylvain	Small Angle Scattering data modelling for Soft Matter systems	SB on 22/03 CIBB on 25/03	b01 b07 b09 b14 b16	b04 b05 b18 b11 b24		
SAXS WAXS lab	GIACOBBE Carlotta, PANINE Pierre, LASSENBERGER Andrea	SAXS WAXS experiment in the lab	XENOCS			b04 b05 b09 b14	
SMLM lab	GLUSHONKOV Oleksandr, WULFFELE Jip	Introduction to Single-Molecule Localization Microscopy (SMLM)	IBS			b03 b06 b19 b23	b07 b12 b24

LAB/TUTORIAL	INSTRUCTOR(S)	TITLE	LOCATION	22nd March	25th March	26th March	27th March
Vlab	BRESSLER Christian	Time-Resolved X-Ray Emission Spectroscopy and Diffraction with an XFEL	ESRF		b02 b03 b09 b10 b16 b19 b20		

GROUP WORK	EXPERT	TITLE	LOCATION	22nd March	25th March	26th March	27th March
GW SAXS	PREVOST Sylvain	Group work on SAXS data	SB				b04 **b09** b20 b22

TUTORIALS:
For some tutorials, you will need to **install specific software beforehand**, to be able to do the data treatment. In that case, your instructor will send you an email before the tutorial and/or will give this information in the summary of the tutorial on the Hercules website. **If you have no computer or do not have the required OS system** for a particular tutorial, you may either share a laptop with another participant or borrow a PC Windows laptop, assuming there is still one available (**send an email to grenier_at_ill.fr at least one week in advance**).

GROUP WORK:
Some full-time participants will participate in a group work. During the group work session, the participants bringing their data will first make a short presentation (purpose of the measurement, experiment done, explanation of their data, problems to solve, …), then they will share their data with the rest of the group and you will work together on the data treatment. Experts from this field will also be present to explain some data treatment and/or try to answer questions about your data analysis. The reference number of the participants bringing their data is enlightened in **bold green**.

Meeting points, at 13:50, for the tutorials, labs, and group work:

Location 'ESRF': **Hall of ESRF central building**
Location 'SB': **Entrance hall of the Science Building** (SB)
Location 'CIBB': Go directly to the **CIBB seminar room** on 2nd floor
Location 'IBS': **Hall of IBS building**

Location 'XENOCS': **Entrance of the XENOCS building**
→ located on avenue des Martyrs, in front of the Oxford tram stop, opposite to the LPSC
Careful: it should take about 10 minutes to get there from the EPN campus

PROGRAMME of PARTNERS
Full-Time participants only

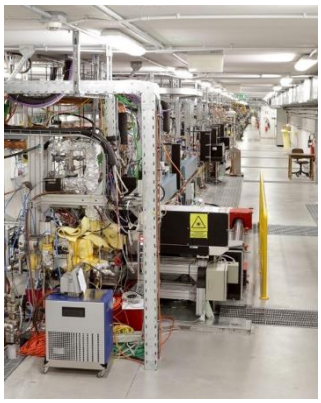

ALBA synchrotron (Barcelona, Spain)


Elettra / FERMI synchrotron & XFEL (Trieste, Italy)


KIT light source (Karlsruhe, Germany)


SOLEIL synchrotron (Saint-Aubin, Paris area, France)


ALBA


FERMI


KIT


SOLEIL

ALBA

GENERAL PLANNING for 11 – 15 MARCH

Arrival at the hotel on Saturday 9 March and departure on Saturday 16 March.

All practical information concerning travel and accommodation will be provided separately.

ALBA web site: www.cells.es

ALL GROUPS:

Monday 11 March

TIME	TITLE	SPEAKER	ROOM
09:00	Welcome message	Caterina Biscari	Maxwell Auditorium
09:15	Serial Synchrotron Crystallography in MX beamlines at ALBA	Xavier Carpena	
09:45	Full Field Soft X-ray transmission microscopy	Andrea Sorrentino	
10:15	Synchrotron-based infrared microspectroscopy: applications in material sciences and biology	Ibraheem Yousef	
10:45	*COFFEE BREAK*		
11:15	Guided Tour to ALBA beamlines and microscopy platform		
12:15	Small and Wide Angle X-ray Scattering for (in situ) characterization of nanostructured materials	Marc Malfois	Maxwell Auditorium
12:45	XAS and XES as complementary tools: insight in in-situ/operando investigations	Laura Simonelli	
13:15	*LUNCH*		
14:30	Soft X-ray absorption and X-ray magnetic circular dichroism	Javier Herrero	Maxwell Auditorium
15:00	Photo Emission Electron Microscopy (PEEM) and Low Energy Electron Microscopy (LEEM)	Miguel Angel Niño	
15:30	Ambient Pressure XPS: Technique and Applications	Virginia Peréz-Dieste	
16:00	The electrochemical NAP-XPS	Juan Jesús Velazco Vélez	
16:30	*COFFEE BREAK*		
17:00	INCAEM: Infrastructure for correlative analysis of advanced energy materials	Lucia Aballe	Maxwell Auditorium

Tuesday 12 March and Wednesday 13 March

TIME	TITLE	WHERE
09:00 – 13:30	Practicals	ALBA beamlines
	LUNCH	
14:30 – 18:00	Practicals	ALBA beamlines

ALBA

Thursday 14 March

SESSION A:

TIME	TITLE	ROOM
09:00	Tutorial: Analysis of data collected at beamlines	Marie Curie or Niels Bohr
11:30	Preparation of an experimental report	
13:30	*LUNCH*	
14:30	Tutorial: Analysis of data collected at beamlines	Marie Curie or Niels Bohr
17:00	Preparation of an experimental report	

More details on next page for the specific schedule of groups A1, A2, A3

SESSION B:

TIME	TITLE	ROOM
09:00	Tutorial: Analysis of data collected at beamlines	Tesla training room
11:30	Preparation of an experimental report	
13:30	*LUNCH*	
14:30	Tutorial: Analysis of data collected at beamlines	Tesla or Ada Lovelance training room
17:00	Preparation of an experimental report.	

Groups B1 and B2 are together for the entire day

ALL GROUPS:

20:00	*SOCIAL DINNER*

Friday 15 March

TIME	TITLE	ROOM
09:00	Preparation of an experimental report: Final touches	Marie Curie
10:00 10:20 10:40	**Presentation of the reports:** Group **A1** → NOTOS + BOREAS exp. Group **A2** → BOREAS + LOREA exp Group **A3** → LOREA + NOTOS exp.	Maxwell Auditorium
11:00	*COFFEE BREAK*	
11:20 11:40	**Presentation of the reports:** Group **B1** → XALOC + MIRAS exp. Group **B2** → NCD-SWEET + MIRAS exp.	Maxwell Auditorium
12:00	**Wrap-up session**	Maxwell Auditorium
13:00	*LUNCH*	
15:00	One to One meetings with ALBA staff	Beamlines

ALBA

PRACTICALS AT ALBA, 12 – 13 March

SESSION A:

BEAMLINE	TITLE	INSTRUCTORS	12 March all day	13 March all day
BL 16	**Practical at NOTOS**: XAS and XRD operando characterization of electrodes	Carlo Marini, Carlos Escudero, Eduardo Villalobos	A1	A3
BL 20	**Practical at LOREA**: ARPES of topological insulators	Massimo Tallarida, Ji Dai, Jordi Prat	A3	A2
BL 29	**Practical at BOREAS**: XAS and XMCD investigation of bulk and surface science samples	Weibin Li, Javier Herrero, Pierluigi Gargiani	A2	A1

SESSION B:

			12 March		13 March	
BEAMLINE	TITLE	INSTRUCTORS	9:00	14:30	9:00	14:30
BL 01	**Practical at MIRAS:** Data collection using the synchrotron-based FTIR microscope at MIRAS BL	Ibraheem Yousef, Tanja Ducic, Martin Kreuzer	B1		B2	
BL 09	**Practical at MISTRAL:** Sample preparation, data collection and applications for cryo-soft X-ray tomography for biological samples	Ana J. Pérez-Berná		B1		
BL 13	**Practical at XALOC:** Macromolecular crystallography hands-on training at XALOC beamline	Roeland Boer, Xavier Carpena, Isidro Crespo, Fernando Gil			B1	
BL 11	**Practical at NCD-SWEET:** Structural changes of nanomaterials in function of temperature: SAXS/WAXS experiment	Marc Malfois, Cristián Huck	B2			

Please refer to pages 19 – 20 for the nominative list of groups A1, A2, A3, B1, and B2.

ALBA

TUTORIALS AT ALBA, 14 March

SESSION A:

			14 March	
ROOM	**TITLE**	**INSTRUCTORS**	**9:00**	**14:30**
Niels Bohr	**Analysis of data collected at LOREA**: ARPES of topological insulators	Massimo Tallarida, Ji Dai	A3	A2
Marie Curie	**Analysis of XAS data collected at NOTOS**: XANES linear combination approach (Athena program), XES data treatment: quantification of the local magnetic moment by the IAD method (Origin program)	Vlad Martin-Diaconescu		A1+A3
Marie Curie	**Analysis of data collected at BOREAS**: Analysis of XAS and XMCD data: spectra treatment, sum rules and introduction to multiplet simulations	Weibin Li, Javier Herrero, Pierluigi Gargiani	A1+A2	

SESSION B:

			14 March	
ROOM	**TITLE**	**INSTRUCTORS**	**9:00**	**14:30**
Tesla training room	**Analysis of data collected at MIRAS**: Infrared data handling (chemical imaging and statistical analysis)	Ibraheem Yousef, Martin Kreuzer	B1+B2	
Tesla training room	**Analysis of data collected at XALOC**: Macromolecular model building and analysis of electron density maps	Damia Garriga, Roeland Boer		B1
Ada Lovelance training room	**Analysis of data collected at NCD-SWEET**: Data reduction using pyFAI software. Preliminary data analysis using SasView software with initial interpretation	Marc Malfois, Cristián Huck		B2

Elettra / FERMI

Elettra Sincrotrone Trieste

GENERAL PLANNING for 11 – 15 MARCH

Arrival at Venice on Saturday 9 March, departure on Sunday 10.
Then arrival at the hotel on Sunday 10 March evening and departure on Saturday 16 March morning.

All practical information concerning travel and accommodation will be provided separately.

More detailed information can be found at: https://indico.elettra.eu/e/HERCULES2024

N.B.: Elettra – FERMI will be in shutdown, hence practicals at the beamlines will be "off-line", and some labs & tutorials will also be organised.

ALL GROUPS:

Monday 11 March

TIME	TITLE	WHO
Morning session – *Chair: Matteo Amati – Room: training room*		
09:00	**Welcome**	
09:30	Frontier Science at FERMI	Filippo BENCIVENGA
10:20	*COFFEE BREAK*	
10:50	Small Angle X-ray Scattering: The answer to dynamics in matter?	Heinz AMENITSCH
11:40	Xpress – Diffraction at Extreme Conditions	Frederico Gil ALABARSE
12:30	*LUNCH BREAK (canteen)*	
Afternoon session		
14:30 – 17:30	**VISIT** ELETTRA-BOOSTER AND FERMI	
15:30	*COFFEE BREAK*	
16:00 – 17:30	**VISIT** ELETTRA-BOOSTER AND FERMI	

Tuesday 12 March

TIME	TITLE	WHO
Morning session – *Chair: Lara Gigli – Room: training room*		
09:00	Basic Aspects of X-ray Photoelectron Spectroscopy	Luca BIGNARDI
09:50	Imaging surfaces using the photoemission electron microscope	Andrea LOCATELLI
10:40	*COFFEE BREAK*	
11:10	Ultrafast phenomena in condensed matter explored through extreme ultraviolet sub-picosecond pulses	Emiliano PRINCIPI
12:00	*LUNCH BREAK (canteen)*	
Afternoon session		
14:00 – 17:00	**Practicals 1**	

Elettra / FERMI

Elettra Sincrotrone Trieste

Wednesday 13 March

TIME	TITLE	WHO
Morning session – *Chair: Matteo Amati – Room: training room*		
09:00	Tunable UV Resonant Raman Scattering: a powerful way to investigate the chemical and structural conformation of peptides, proteins, nucleic acids, carbonaceous systems and organic semiconductors	Francesco D'AMICO
09:50	Soft X-ray Microscopy at TwinMic (Elettra)	Alessandra GIANNONCELLI
10:40	*COFFEE BREAK*	
11:10	Structural biology: past achievements and future perspective	Silvia Caterina Elvira ONESTI
12:00	*LUNCH BREAK (canteen)*	
Afternoon session		
14:00 – 17:00	**Practicals 2**	

Thursday 14 March

TIME	TITLE	WHO
Morning session – *Chair: Lara Gigli – Room: training room*		
09:00	Probing the electronic structure of solids by photoemission spectroscopy	Polina SHEVERDYAEVA
09:50	Archaeologists at Elettra: From the field to the beamline	Simone LEMMERS
10:40	*COFFEE BREAK*	
11:10	Funding opportunities for young researchers	Cecilia BLASETTI
12:00	*LUNCH BREAK (canteen)*	
Afternoon session		
14:00 – 17:00	**Practicals 3**	

Friday 15 March

TIME	TITLE	WHO
Morning session – *Chair: Matteo Amati – Room: training room*		
09:00	CERIC-ERIC the multi-technique research infrastructure for materials research in Central-Eastern Europe	Dariusz Jan BRZOSKO
09:50	NFFA-Europe: your Research Infrastructure for Nanoscience	Cristina AFRICH
10:40	*COFFEE BREAK*	
11:10	FEEDBACK meeting	Matteo AMATI, Lara GIGLI
12:10	*LUNCH BREAK (canteen)*	
Social events		
14:00	Social tour	
19:00 – 22:30	*SOCIAL DINNER*	

Elettra / FERMI

Elettra Sincrotrone Trieste

PRACTICALS & LABS AT ELETTRA / FERMI, 12 – 14 March

SESSION A:

BEAMLINE / LAB / TUTORIAL	TITLE	INSTRUCTORS	12 March 14:00	13 March 14:00	14 March 14:00
NANO-SPECTROSCOPY	Imaging surfaces using low energy electrons: basic principles, methodology and data analysis	Tevfik Onur MENTES, Andrea LOCATELLI	A4		
TERAFERMI	(Terahertz Time Domain Spectroscopy experiment)	Paola Di PIETRO, Johannes SCHMIDT, Andrea PERUCCHI	A1		
T-REX 1	(Time-Resolved ARPES of quantum materials)	Federico CILENTO, Wibke BRONSCH	A3		
Nanoinnovation LAB 1	Atomic Force Microscopy: morphomechanical imaging at the nanoscale	Loredana CASALIS, Pietro PARISSE	A2		
T-REX 2	(Time-Resolved Optical Spectroscopy of Transition Metal DiChalcogenides)	Federico CILENTO, Wibke BRONSCH		A2	
SISSI tutorial	(Introduction to multivariate analyses for spectral datasets)	Giovanni BIRARDA		A1	
NANOESCA	Metal-organic networks on metal substrate: LEED and photoemission tomography studies	Vitaliy FEYER		A4	
DXRL	Fabrication of microfluidic circuits and diffraction gratings through UV lithography and soft-polymer casting	Benedetta MARMIROLI		A3	
TOMOLAB	From Synchrotron- to laboratory-based X-ray computed microtomography: practical aspects	Diego DREOSSI			A2
Nanoinnovation LAB 2	Atomic force Microscopy: high speed imaging	Loredana CASALIS, Pietro PARISSE			A3
SISSI	(s-SNOM nanoscopic analysis for the sub-surface chemical identification of thin samples)	Federica PICCIRILLI			A1
XRF tutorial	XRF data analysis	Ilaria CARLOMAGNO			A4

Practicals at Elettra, Practicals at FERMI, Labs, *Tutorials*

SESSION B:

LAB / TUTORIAL	TITLE	INSTRUCTORS	12 March 14:00	13 March 14:00	14 March 14:00
SAXS tutorial	SAXS Data Analysis on biomembranes	Heinz AMENITSCH	B		
Biolab	Protein crystalization	Silvia Caterina Elvira ONESTI		B	
XRD1 tutorial	Crystallography in Action: A Practical Approach to Small Molecular Structures	Pradip Kumar MONDAL			B

Labs, *Tutorials*

Please refer to pages 19-20 for the nominative list of groups A1, A2, A3, A4, and B.

KIT

Karlsruher Institut für Technologie

GENERAL PLANNING for 11 – 15 MARCH

Arrival at the hotel on Saturday 9 March evening at the guesthouse and departure on Saturday 16 March morning.

All practical information concerning travel and accommodation will be provided separately.

KIT-Shuttle: Campus North to Campus South: 17:05-17:26 (every 30 min, last departure: 19:05)

Monday 11 March

ALL GROUPS:

TIME	TITLE	WHO	WHERE
07:30	Meeting Point at KIT Guest House	tba	
08:00 – 08:25	Transfer to Campus North (KIT Shuttle)	tba	
08:25	Registration to KIT Campus North (Passport/ID required)	tba	
Up to 09:15	*GET TOGETHER / COFFEE*		Bldg. 348 Seminar Room Floor
09:15 – 09:30	Welcome	Tilo Baumbach	Bldg. 348 Seminar Room
09:30 – 10:15	Lecture: Research with Synchrotron Radiation at KIT	Tilo Baumbach	Bldg. 348 Seminar Room
10:15 – 11:00	Lecture: Introduction to the Karlsruhe Accelerator Test Facility (KARA)	Marcel Schuh	Bldg. 348 Seminar Room
11:00 – 11:20	*COFFEE BREAK*		Bldg. 348 Seminar Room Floor
11:20 – 12:10	Instruction: Safety and Radiation Protection	Pawel Wesolowski	Bldg. 348 Seminar Room
12:10 – 13:00	Tour: KARA and KIT Light Source Beamline Clusters	Tilo Baumbach	Bldg. 348
13:00 – 14:00	*LUNCH BREAK KIT casino*		

GROUPS A1, A2:

TIME	TITLE	WHO	WHERE
14:00 – 17:30	Startup of the Electron Storage Ring KARA	Marcel Schuh, Johannes Steinmann, Edmund Blomley, Bastian Härer	Bldg. 348 Control Room

GROUP B:

TIME	TITLE	WHO	WHERE
14:00 – 17:30	European Zebrafish Resource Center (EZRC); Medaka fish inbreeding; small animal sample preparation	Felix Loosli et al.	Bldg. 348 (meeting point)

KIT

Karlsruher Institut für Technologie

From Tuesday 12 March to Friday 15 March

TIME	TITLE
09:00 – 17:30	Specific lectures, practicals at beamlines, and tutorials on different topics for groups **A1**, **A2**, and **B**

	Tuesday, March 12		
up to 9:15	Get together/Coffee Bldg. 348 Seminar Room Floor		
	GROUP B	**GROUP A2**	**GROUP A1**
9:15-10:45	**Lecture 1** Small Animal X-ray Imaging with Synchrotron Radiation Bldg. 348 Seminar Room Thomas van de Kamp	**Lecture 1** Micro-Tomography & Laminography with Synchrotron Radiation - Part I Bldg. 345 Seminar Room Tilo Baumbach	**Lecture 1** Hard X-ray Absorption Spectroscopy with Synchrotron Radiation: Beamline Optics, Experiment, Data Acquisition Bldg. 329 Seminar Room Jörg Rothe
10:45-11:15	Coffee Bldg. 348 Seminar Room Floor		
11:15-12:45	11:15-12:00 **Tutorial 1 - Part I** Experimentals: The Ufo station, Concert control system, detector alignment, sample alignment, data acquisition, automated DAQ Bldg. 348 Small Seminar Room Angelica Cecilia		**Tutorial 1** Introduction to specific requirements for XAS samples and preparation of transmission samples for XAS experiments Bldg. 329 Seminar Room Jörg Rothe
	12:00-13:00 Lunch Break KIT Casino	12:00-13:00 **Tutorial 1 - Part II** Introduction to the beamline and control system Bldg. 348 IMAGE Beamline Tomas Farago	
12:45-14:00	13:00-14:00 **Tutorial 1 - Part II** Introduction to the beamline and control system Bldg. 348 IMAGE Beamline Marcus Zuber	13:00-14:00 Lunch Break KIT Casino	Lunch Break KIT Casino
14:00-15:30	**Experiment 1** Morphological Imaging of Small Animals by Serial Micro-Tomography (Sample Medaka) Bldg. 348 IMAGE Beamline Marcus Zuber, Elias Hamann, Thomas van de Kamp	**Lecture 2** Micro-Tomography & Laminography with Synchrotron Radiation - Part II Bldg. 345 Seminar Room Tilo Baumbach	**Experiment 1** Sample preparation in the on-site chemistry lab Bldg. 348 INE Beamline Kathy Dardenne, Tim Pruessmann, Jörg Rothe
15:30-16:00	Coffee Bldg. 348 Seminar Room Floor		

KIT

16:00-17:30	**Tutorial 2** 2D and 3D Image Reconstruction	**Experiment 1** Towards Serial Micro-Tomography of Materials and Devices	**Experiment 2** Introduction to beamline components, sample installation, alignment and data acquisistion macros
	Bldg. 329 Seminar Room	Bldg. 348 IMAGE Beamline	Bldg. 348 INE Beamline
	Tomas Farago	Marcus Zuber, Elias Hamann, Angelica Cecilia	Kathy Dardenne, Tim Pruessmann, Jörg Rothe

Wednesday, March 13			
up to 9:15	Get together/Coffee Bldg. 348 Seminar Room Floor		
	GROUP B	**GROUP A2**	**GROUP A1**
9:15-10:45	**Lecture 2** X-ray imaging of insects to study evolution, biodiversity, and functional morphology	**Tutorial 2** 2D and 3D Image Reconstruction	**Lecture 2** Actinide electronic structure and speciation using high energy resolution X-ray emission and absorption spectroscopy
	Bldg. 329 Seminar Room	Bldg. 345 Seminar Room	Bldg. 348 Seminar Room
	Thomas van de Kamp	Tomas Farago	Tonya Vitova
10:45-11:15	Coffee Bldg. 348 Seminar Room Floor		
11:15-12:45	**Reconstruction CT**	**Reconstruction CT**	**Tutorial 2** Introduction to XAFS data analysis (XANES and EXAFS)
	Bldg. 329 Seminar Room	Bldg. 345 Seminar Room	Bldg. 348 Seminar Room
	Chandan Sarkar	Clement Tavakoli	Kathy Dardenne
12:45-14:00	Lunch Break KIT Casino		
14:00-15:30	**Tutorial 3** Image analysis: volume rendering and semi-manual segmentation	**Tutorial 3** Image analysis: volume rendering and semi-manual segmentation	**Experiment 2** Retrieval of data sets acquired during the night, first steps of data analysis (calibration, alignment, averaging, background subtraction, normalization, …)
	Bldg. 329 Seminar Room	Bldg. 345 Seminar Room	Bldg. 348 INE Beamline
	Thomas van de Kamp	Alexey Ershov	tba
15:30-16:00	Coffee Bldg. 348 Seminar Room Floor		
16:00-17:30	**Segmentation**	**Segmentation**	**Experiment 2** to be continued if required
	Bldg. 329 Seminar Room	Bldg. 345 Seminar Room	Bldg. 348 INE Beamline
	Jenny Hein, Janes Odar	Mathias Hurst	tba

KIT

Karlsruher Institut für Technologie

	Thursday, March 14		
	GROUP B	**GROUP A2**	**GROUP A1**
up to 9:15	Get together/Coffee Bldg. 348 Seminar Room Floor		
9:15-10:45	**Analysis CT - Part I** Bldg. 329 Seminar Room Thomas van de Kamp, Alexey Ershov	**Experiment 2 - Part I** Computed Laminography of Flat Devices Bldg. 348 IMAGE Beamline Daniel Hänschke, Elias Hamann, Marcus Zuber	**Lecture 1** Introduction into (hard) x-ray photoelectron spectroscopy Bldg. 345 Seminar Room Dirk Hauschild
10:45-11:15	Coffee Bldg. 348 Seminar Room Floor		
11:15-12:45	**Analysis CT - Part II** Bldg. 329 Seminar Room Thomas van de Kamp, Alexey Ershov	**Experiment 2 - Part II** Computed Laminography of Flat Devices Bldg. 348 IMAGE Beamline Daniel Hänschke, Elias Hamann, Marcus Zuber	**Experiment 1 - Part I** Hard x-ray photoelectron spectroscopy (HAXPES) of thin-film solar cell samples Bldg. 348 X-SPEC Beamline Constantin Wansorra, Dirk Hauschild, Lothar Weinhardt
12:45-14:00	Lunch Break KIT Casino		
14:00-15:30	**Experiment 2 - Part I** Computed Laminography of Fossils Bldg. 348 IMAGE Beamline Daniel Hänschke, Elias Hamann,Marcus Zuber	**Analysis Lamino und CT - Part I** Bldg. 329 Seminar Room Mathias Hurst	**Experiment 1 - Part II** Hard x-ray photoelectron spectroscopy (HAXPES) of thin-film solar cell samples Bldg. 348 X-SPEC Beamline Constantin Wansorra, Dirk Hauschild, Lothar Weinhardt
15:30-16:00	Coffee Bldg. 348 Seminar Room Floor		
16:00-17:30	**Experiment 2 - Part II** Computed Laminography of Fossils Bldg. 348 IMAGE Beamline Daniel Hänschke, Elias Hamann, Marcus Zuber	**Analysis Lamino und CT - Part II** Bldg. 329 Seminar Room Mathias Hurst	**Tutorial 1** Data analysis: Hard x-ray photoelectron spectroscopy (HAXPES) Bldg. 348 X-SPEC Beamline Constantin Wansorra, Dirk Hauschild, Lothar Weinhardt
Evening	Dinner (optional)		

KIT

Karlsruher Institut für Technologie

	Friday, March 15		
	GROUP B	**GROUP A2**	**GROUP A1**
up to 9:15	Get together/Coffee Bldg. 348 Seminar Room Floor		
9:15-10:45	**Analysis, Segmentation, 3D Printing, Report - Part I** Bldg. 345 Seminar Room Thomas van de Kamp, Angelica Cecilia, Alexey Ershov, Jenny Hein	**Lamino Analysis, Segmentation, 3D Printing, Report - Part I** Bldg. 345 Seminar Room Daniel Hänsche, Elias Hamann, Mathias Hurst, Marcus Zuber	**Lecture 2** Introduction into soft x-ray spectroscopy Bldg. 329 Seminar Room Lothar Weinhardt
10:45-11:15	Coffee Bldg. 348 Seminar Room Floor		
11:15-12:45	**Analysis, Segmentation, 3D Printing, Report - Part II** Bldg. 345 Seminar Room Thomas Van de Kamp, Angelica Cecilia, Alexey Ershov, Jenny Hein	**Lamino Analysis, Segmentation, 3D Printing, Report - Part II** Bldg. 345 Seminar Room Daniel Hänsche, Elias Hamann, Mathias Hurst, Marcus Zuber	**Experiment 2 - Part I** X-ray emission spectroscopy (XES) and Resonant inelastic soft x-ray scattering (RIXS) Bldg. 348 X-SPEC Beamline Ralph Steininger, Lothar Weinhardt, Constantin Wansorra
12:45-14:00	Lunch Break KIT Casino		
14:00-15:30	**Preparation - Presentation and Discussion - Part I** Bldg. 348 Seminar Room All	**Preparation - Presentation and Discussion - Part I** Bldg. 345 Seminar Room All	**Experiment 2 - Part II** X-ray emission spectroscopy (XES) and Resonant inelastic soft x-ray scattering (RIXS) Bldg. 348 X-SPEC Beamline Ralph Steininger, Lothar Weinhardt, Constantin Wansorra
15:30-16:00	Coffee Bldg. 348 Seminar Room Floor		
16:00-17:30	**Presentation and Discussion - Part II** Bldg. 348 Seminar Room All	**Presentation and Discussion - Part II** Bldg. 345 Seminar Room All	**Tutorial 2** Data analysis: X-ray emission spectroscopy (XES) and Resonant inelastic soft x-ray scattering (RIXS) Bldg. 348 X-SPEC Beamline Ralph Steininger, Lothar Weinhardt, Constantin Wansorra

Please refer to pages 19-20 for the nominative list of groups A1, A2, and B

SOLEIL

GENERAL PLANNING for 11 – 15 MARCH

Arrival at the hotel on Saturday 9 March evening and departure on Saturday 16 March morning.

All practical information concerning travel and accommodation will be provided separately.

SOLEIL website: https://www.synchrotron-soleil.fr/fr

Monday 11 March

ALL:

TIME	TITLE	SPEAKER	ROOM
8:30	On site arrival	-	Reception building
9:00	Welcome message	Jean SUSINI	Auditorium
9:30	How light became a wave?	Sylvain RAVY	Auditorium
11:00	*COFFEE BREAK*		
11:30	Calculation of a hard X-rays beamline	Thierry MORENO	Auditorium
13:00	*LUNCH (CANTEEN)*		
14:00	Guide tour of SOLEIL	Communication Group	
15:00	Code simulation of a Beamline	Emmanuel FARHI	Auditorium
16:30	*COFFEE BREAK*		

SESSION A:

TIME	TITLE	SPEAKER	ROOM
17:00	ARPES	Andrés SANTANDER	Auditorium

SESSION B:

TIME	TITLE	SPEAKER	ROOM
17:00	UV and Visible light spectroscopy for biological application	Frédéric JAMME	A2.1.32 Libra

ALL:

18:30	*WELCOME COCKTAIL*

SOLEIL

Tuesday 12 March

TIME	TITLE	SPEAKER	BEAMLINES/ROOM
9:00	Practicals		SOLEIL beamlines
12:00	*LUNCH (CANTEEN)*		
13:30	Practicals		SOLEIL beamlines
17:30	Heritage research with synchrotron techniques	Sebastian SCHOEDER	A2.1.32 Libra

Wednesday 13 March

TIME	TITLE	SPEAKER	BEAMLINES/ROOM
9:00	Practicals		SOLEIL beamlines
12:00	*LUNCH (CANTEEN)*		
13:30	Practicals		SOLEIL beamlines
17:30	Data Analysis	FREE SESSION	A1.0.60 Aquarius A2.1.22 Pyxis A1.1.48 Virgo A2.0.28 Colomba A1.0.59 Phenix A1.1.57 Orion

Thursday 14 March

ALL :

TIME	TITLE	SPEAKER	ROOM
9:00	IR spectroscopy	Ferenc BORONDICS	Auditorium
10:30	*COFFEE BREAK*		
11:00	Data analysis and machine learning	Christophe SANDT	Auditorium
12:30	*LUNCH (CANTEEN)*		
13:30	*GROUP PHOTO*		
14:00	How to build a neutron spectrometer?	Frédéric OTT	Auditorium
15:30	*COFFEE BREAK*		

SESSION A:

TIME	TITLE	SPEAKER	ROOM
16:00	Scanning transmission X-rays microscopy: Basics and Applications	Sufal SWARAJ	A1.0.59 Phenix

SESSION B:

TIME	TITLE	SPEAKER	ROOM
16:00	Membrane and therapeutic targets	Muriel MASI	A1.1.57 Orion

ALL :

TIME	TITLE	SPEAKER	ROOM
17:30	Data analysis	FREE SESSION	A1.0.60 Aquarius A2.1.22 Pyxis A1.1.48 Virgo A2.1.32 Libra A1.0.59 Phenix A1.1.57 Orion

SOLEIL

Friday 15 March

ALL:

TIME	TITLE	SPEAKER	ROOM
9:00	Talk preparation	FREE SESSION	A2.1.22 Pyxis A1.1.48 Virgo A2.1.32 Libra A1.0.59 Phenix A1.1.57 Orion A2.1.31 Gemini
10:30	*COFFEE BREAK*		
11:00	Talk preparation	FREE SESSION	A2.1.22 Pyxis A1.1.48 Virgo A2.1.32 Libra A1.0.59 Phenix A1.1.57 Orion A2.1.31 Gemini
12:30	*LUNCH (CANTEEN)*		
14:00	Students Presentation and evaluation meeting	PUBLIC SESSION	Auditorium

SOLEIL

PRACTICALS AT SOLEIL, 12 – 13 March

SESSION A:

BEAMLINE	TITLE	INSTRUCTORS	12 March	13 March
HERMES	High resolution magnetic microscoscopy using STXM and Ptychography	Rachid BELKHOU	A1	A1
TEMPO	3D to 2D transition of Cu2Te films on Cu(111) studied by ARPES and SXRD	Azzedine BENDOUNAN	A2	
SIXS		Alina VLAD		A2
AILES	Spin states in Fe-based compounds, investigated through XAS and IR-AS	Jean-Blaise BRUBACH, Mariia DRONOVA	A3	
SAMBA		Emiliano FONDA		A3
CRISTAL	Memory effect of Layered double Hydroxide (LDH) by EXAFS and WAXS	Erik ELKAIM	A4	
ROCK		Valérie BRIOIS, Anthony BEAUVOIS		A4

SESSION B:

BEAMLINE / LAB	TITLE	INSTRUCTORS	12 March	13 March
LABO Bio	Monitoring antibiotic accumulation in Gram-negative bacteria using spectrofluorimetry and DUV-microscopy	Muriel MASI, Hugo CHAUVET	B1	
DISCO				B1
SMIS	Liver diseases by integrative synchrotron imaging microcopies	Christophe SANDT	B2	
LUCIA		Ana PRADAS DEL REAL		B2

Please refer to pages 19-20 for the nominative list of groups A1, A2, A3, A4, B1, and B2.

LECTURERS of GRENOBLE (weeks 1, 2, 3, 5)

FAMILY NAME	First name	Institute
ALBA-SIMIONESCO	Christiane	LLB
ATTWOOD	David	University of California, Berkeley
BALLANDRAS-COLAS	Allison	IBS
BARENDS	Thomas	Max Planck Institute for Medical Research
BARNES	Adrian	University of Bristol, Department of Physics
BARRETT	Ray	ESRF
BLACKLEDGE	Martin	IBS
BLAKELEY	Matthew	ILL
BOERI ERBA	Elisabetta	IBS / EMBL / UVHCI
BOURGEOIS	Dominique	IBS
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COATI	Alessandro	SOLEIL
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CZAKKEL	Orsolya	ILL
DE BEER	Serena	Max Planck Institute for Chemical Energy Conversion
DE BOISSIEU	Marc	SIMaP
DIL	Hugo	EPFL
FAVRE-NICOLIN	Vincent	ESRF
FORSYTH	Trevor	Medical Faculty, Lund University
GABEL	Frank	IBS
GARCIA SAKAI	Victoria	ISIS
GERELLI	Yuri	Univ. Politecnica delle Marche
GÖTZ	Andrew	ESRF
GRAAFSMA	Heinz	DESY Hamburg
GRENIER	Béatrice	UGA / CEA-IRIG
GRUEBEL	Gerhart	European XFEL
GUIZAR SICAIROS	Manuel	PSI
HARRISON	Andrew	ELI ERIC
HJÖRVARSSON	Björgvin	Uppsala University
JACOBSEN	Chris	Northwestern University
LAKE	Bella	HZB
LANGRIDGE	Sean	ISIS
LE TACON	Matthieu	KIT
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LYONNARD	Sandrine	CEA-IRIG
MADSEN	Anders	European XFEL
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SCHIRO	Giorgio	IBS
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STAUB	Urs	PSI
TENGATTINI	Alessandro	UGA / ILL
TRAMPARI	Sofia	DECTRIS
TROMBA	Giuliana	Elettra Sincrotrone Trieste
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ZACCAI	Giuseppe	CNRS

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CARAMELLO	Nicolas	ESRF / Univ. Hamburg
CASTILLO MICHEL	Hiram	ESRF
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CHAHINE	Gilbert	ESRF
CHECCHIA	Stefano	ESRF
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CORLEY-WICIAK	Cédric	ESRF
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CRISTIGLIO	Viviana	ILL
DA SILVA	Julio Cesar	CNRS / Institut Néel
D'ACAPITO	Francesco	CNR-IOM-OGG
DE BRION	Sophie	UGA / Institut Néel
DE ZITTER	Elke	IBS
DOLLMAN	Kathleen	ESRF
DRNEC	Jakub	ESRF
ENGILBERGE	Sylvain	ESRF
FABELO	Oscar	ILL
FANG	Haixing	ESRF
FAVIER	Adrien	IBS
FAVRE-NICOLIN	Vincent	ESRF
FERNANDEZ	Vincent	ESRF
FITCH	Andy	ESRF
FOUQUET	Peter	ILL
GAINZA MARTIN	Javier	ESRF
GAJDOS	Lukas	ILL
GALARRETA RODRIGUEZ	Itziar	ESRF
GARBARINO	Gaston	ESRF
GARCIA PRIETO	Ana	ESRF
GERIN	Max	ESRF
GIACOBBE	Carlotta	XENOCS
GLATZEL	Pieter	ESRF
GLUSHONKOV	Oleksandr	IBS
GRUDININ	Sergei	CNRS
GUTFREUND	Philipp	ILL
HANFLAND	Michael	ESRF
HANSEN	Thomas	ILL
HELFEN	Lukas	ILL
HENNIG	Christoph	ESRF
HENRIQUES	Margarida	Czech Academy of Sciences
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HOFFMANN	Ingo	ILL
IVANOV	Alexandre	ILL
JIMENEZ-RUIZ	Monica	ILL
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JUYOUX	Pauline	IBS
KARPOV	Dmitry	ESRF
KIEFFER	Jerome	ESRF
KOZA	Michael Marek	ILL
KVASHNINA	Kristina	ESRF
LASSENBERGER	Andrea	XENOCS
LAVERSENNE	Laetitia	CNRS / Institut Néel
LEAKE	Steven	ESRF
LEYNAUD	Olivier	CNRS / Institut Néel
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MENG	He	ESRF
MEURER	Florian	Univ. Regensburg
MEZOUAR	Mohamed	ESRF
MICHA	Jean-Sébastien	CNRS / CEA - IRIG
NASSIF	Vivian	CNRS / Institut Néel
NICOLAOU	Alessandro	synchrotron SOLEIL
OLECHNOVIC	Kliment	UGA
ORSILLI	Jacopo	ESRF
PADDISON	Joseph	Oak Ridge National Laboratory
PAIDI	Vinod	ESRF
PAKHOMOVA	Anna	ESRF
PANINE	Pierre	XENOCS
PARACINI	Nicolò	ILL
PETERS	Judith	UGA / ILL
PETIT	Sylvain	CEA - LLB
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PHILIT	Florian	ILL
POREE	Victor	synchrotron SOLEIL
POUPON	Morgane	Czech Academy of Sciences
PRABHU	Mahesh Krishna	ESRF
PRÉVOST	Sylvain	ILL
PUENTE ORENCH	Inés	INMA-CSIC / ILL
PURI	Alessandro	CNR-IOM-OGG
QURESHI	Navid	ILL
RACK	Alexander	ESRF
RETEGAN	Marius	ESRF
RODRIGUEZ VELAMAZAN	José Alberto	ILL
RODRIGUEZ-CARVAJAL	Juan	ILL
RODRIGUEZ-LAMAS	Raquel	ESRF
ROSENTHAL	Martin	ESRF
ROYANT	Antoine	ESRF
SANCHEZ DEL RIO	Manuel	ESRF
SARTORI	Andrea	ESRF
SEYDEL	Tilo	ILL
SHEATH	Bradley	ESRF
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TENGATTINI	Alessandro	UGA / ILL
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VASALA	Sami	ESRF
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WEBER	Tobias	ILL
WEHINGER	Bjorn	ESRF
WILHELM	Fabrice	ESRF
WULFFELE	Jip	IBS
ZANOTTI	Jean-Marc	ILL
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LECTURERS & INSTRUCTORS OF PARTNER SITES (week 3)

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DUCIC	Tanja	ALBA
ESCUDERO	Carlos	ALBA
GARGIANI	Pierluigi	ALBA
GARRIGA	Damià	ALBA
GIL	Fernando	ALBA
HERRERO	Javier	ALBA
HUCK	Cristián	ALBA
KREUZER	Martin	ALBA
MALFOIS	Marc	ALBA
MARINI	Carlo	ALBA
MARTIN-DIACONESCU	Vlad	ALBA
NIÑO	Miguel Ángel	ALBA
PÉREZ	Ana Joaquina	ALBA
PÉREZ DIESTE	Virginia	ALBA
PRAT	Jordi	ALBA
SIMONELLI	Laura	ALBA
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SOLANO	Eduardo	ALBA
SORRENTINO	Andrea	ALBA
TALLARIDA	Massimo	ALBA
LI	Weibin	ALBA
VELASCO	Juan Jesús	ALBA
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ALABARSE	Frederico Gil	Elettra
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BENCIVENGA	Filippo	Elettra
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BIRARDA	Giovanni	Elettra
BLASETTI	Cecilia	Elettra
BRONSCH	Wibke	Elettra
BRZOSKO	Dariusz Jan	CERIC-ERIC
CARLOMAGNO	Ilaria	Elettra
CASALIS	Loredana	Elettra
CILENTO	Federico	Elettra
D'AMICO	Francesco	Elettra
DiPIETRO	Paola	Elettra
DREOSSI	Diego	Elettra
FEYER	Vitaliy	Peter Grünberg Institute, FZ Jülich
GIANNONCELLI	Alessandra	Elettra
LEMMERS	Simone Anna Maria	Elettra
LOCATELLI	Andrea	Elettra
MARMIROLI	Benedetta	TU Gratz
MENTES	Tevfik Onur	Elettra
MONDAL	Pradip Kumar	Elettra
ONESTI	Silvia Caterina Elvira	Elettra
PARISSE	Pietro	Elettra
PERUCCHI	Andrea	Elettra
PICCIRILLI	Federica	Elettra
PRINCIPI	Emiliano	Elettra
SCHMIDT	Johannes	Elettra
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DARDENNE	Kathy	KIT
ERSHOV	Alexey	KIT
FARAGO	Tomas	KIT
HAMANN	Elias	KIT
HÄNSCHKE	Daniel	KIT
HÄRER	Bastian	KIT
HAUSCHILD	Dirk	KIT
HEIN	Jenny	KIT
HURST	Mathias	KIT
LOOSLI	Felix	KIT
ODAR	Janes	KIT
PRUESSMANN	Tim	KIT
ROTHE	Jörg	KIT
SARKAR	Chandan	KIT
SCHUH	Marcel	KIT
STEININGER	Ralph	KIT
STEINMANN	Johannes	KIT
TAVAKOLI	Clement	KIT
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VITOVA	Tonya	KIT
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BELKHOU	Rachid	SOLEIL - HERMES
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BORONDICS	Ferenc	SOLEIL – SMIS
BRIOIS	Valérie	SOLEIL – ROCK
BRUBACH	Jean-Blaise	SOLEIL - AILES
CHAUVET	Hugo	SOLEIL – DISCO
DRONOVA	Mariia	SOLEIL – AILES
ELKAIM	Erik	SOLEIL - CRISTAL
FARHI	Emmanuel	SOLEIL - Informatique
FONDA	Emiliano	SOLEIL – SAMBA
JAMME	Frédéric	SOLEIL - DISCO
MASI	Muriel	SOLEIL - DISCO
MORENO	Thierry	SOLEIL- METROLOGY
OTT	Frédéric	CEA – LLB – INP ; INC
PRADAS DEL REAL	Ana	SOLEIL – LUCIA
RAVY	Sylvain	CNRS – LPS – INP; INSB
SANDT	Christophe	SOLEIL – SMIS
SANTANDER - SYRO	Andrés	ISMO
SCHOEDER	Sebastian	SOLEIL - PUMA
SUSINI	Jean	SOLEIL – Direction
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VLAD	Alina	SOLEIL - SIXS

LIST OF PARTICIPANTS – SESSION A

FAMILY NAME	First name	Nationality	Part time	University/Institution	Country
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BAIRAGI	Monica	Indian	PT	Vikram University, Ujjain, India	India
BAZARGAN	Maryam	Iranian	PT	Ferdowsi University of Mashhad	Iran
BELAK VIVOD	Matic	Slovenian		Jožef Stefan Institute	Slovenia
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CHU	Kang-Ching	Taiwanese		National Synchrotron Radiation Research Center	Taiwan
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DEHUE	Mathilde Annick Lucette	French		University of Grenoble	France
DHANALAKSHMI VEERARAJ	Mano Raj	Indian	PT	Paul Scherrer Institut	Switzerland
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GRAVERSEN	Laura Glei	Danish		University of Copenhagen	Denmark
GRIB	Mustapha	Algerian	PT	Sorbonne Université	France
GUMIENNIK	Uladzislaw	Belarusian		AGH University of Krakow	Poland
GUPTA	Neha	Indian	PT	HOMI BHABHA NATIONAL INSTITUTE	India
GUZMAN BRAMBILA	Julio Cesar	Mexican		Nantes University	France
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HOLÉ	Clément	French		ESRF	France
HUĆ	Agnieszka Anna	Polish		University of Warsaw	Poland
JAISWAL	Ankit	Indian	PT	Nanyang Technological University	Singapore
JALALUDEEN	Mohamed Faizal Ussama	Indian	PT	Aalborg University	Denmark
JENTSCHKE	Thomas	German		Helmholtz-Zentrum Hereon	Germany
KANCKO	Andrej	Slovak		Charles University in Prague	Czechia
KHALIQ	Ahmar	Pakistani	PT	University of Siegen	Germany
KNAUFT	Manuel	German		Max Planck Institute for Solid State Research	Germany
KÖHN	Christian	German		University of Hamburg - IAACh	Germany
KOUOI	Xavier	French		TU Delft	Netherlands
KUMAR	Nitin	Indian		UGC DAE CSR, BARC, Mumbai Centre	India
KUMAR	Charan	Indian	PT	PES College of Engineering, Mandya	India
KUMAR	Shubham	Indian	PT	Indian Institute of Technology Bombay	India
KUMAR	Sudhanshu	Indian	PT	FRM-II, Technical University of Munich	Germany
KURAWLE	Nilofar	Indian	PT	UGC-DAE CSR, MUmbai Centre	India
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LIU	Meng-Ting	Taiwanese		National Taiwan University	Taiwan
MACHOVEC	Petr	Czech		Charles University	Czechia
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MASTO	Matteo	Italian		University of Grenoble - Alpes	France
MERZONI	Giacomo	Italian		European XFEL	Germany
MIRSHAHI	Roxana	Iranian	PT	Università degli studi Roma Tre	Italy
OUBAID	Yassine	Moroccan		University Paris Saclay	France
PACHECO CACHO	Luís Miguel	Portuguese		University of Coimbra	Portugal
PADRON ALEMAN	Kenny	American		Institut Laue-Langevin	France

FAMILY NAME	First name	Nationality	Part time	University/Institution	Country
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PHILLIPS	George	British	PT	University of Cambridge	United Kingdom
PUNKE	Stefanie	German		Univeristy of Bern	Switzerland
ROY	Riya	Indian		UGC-DAE Consortium for Scientific Research (KC)	India
SAS	Wojciech	Polish		Institute of Physics, Zagreb, Croatia	Croatia
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STEPHANT	Thomas	French		University of Rennes	France
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THREADINGHAM	Jasper	British		University of Oxford	United Kingdom
URS	Thejas Gopal Krishne	Indian	PT	PES College of Engineering, Mandya	India
VAN KOUGHNET	Kiri	New Zealand		Victoria University of Wellington	New Zealand
VIJAY	Kritika	Indian		Raja Ramanna Centre for Advanced Technology	India
WALZ	Erik	German		FRM 2 Research Reactor Munich	Germany
WIGGERS	Christin	German		MARUM, University of Bremen	Germany
WILD	Peter	German		Technical University of Munich	Germany
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GLERUP	Johan	Danish		University of Gothenburg	Sweden
GUERRERO FLOREZ	Valentina	Colombian		Linköping University	Sweden
IVANOVA	Ebru	Bulgarian		Koc University	Turkey
KONCITIKOVA	Radka	Czech	PT	Aix-Marseille University - INRAE	France
KROG	Lasse Skjoldborg	Danish		Institute of Pharmacy, University of Copenhagen	Denmark
LABECKA	Nikol	Swedish		Lund University	Sweden
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LI	Hao	Chinese		Frontier Sciences, The University of Tokyo	Japan
MA	Li	Chinese		University of Oxford	United Kingdom
MAZHAR	Aliaa	Egyptian		Egyptian Atomic Energy Authority	Egypt
MEHLER	Filip	Swedish		Uppsala University	Sweden
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SCHWENNER	Naike	German		SLU-Sveriges lantbruksuniversitet	Sweden
SHAFIEI KAMEL	Alaleh	Iranian	PT	Koc University	Turkey
SHARMA	Tulika	Indian		Forschungszentrum Jülich	Germany
TAJBAKHSH	Kiarash	Iranian		Empa	Switzerland
TOLLEMACHE	Cherie Tania	New Zealand		The University of Auckland	New Zealand