



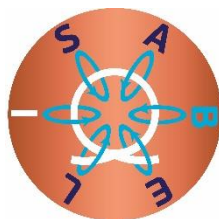
Deliverable Number: 2.3	Due date: August 2022
Deliverable Title: Lecture notes EMFL school	Reporting period: RP2
WP number: WP2	Issue date: 20.04.2023
Leader Beneficiary: UNOTT	Authors: Eva Bezgousko, Steffen Wiedmann
Deliverable type: Website, patents, filings	Reviewers: ISABEL Coordination Board
Dissemination level: Public	

ISABEL

Improving the sustainability of the European Magnetic Field Laboratory

DELIVERABLE 2.3

LECTURE NOTES EMFL SCHOOL



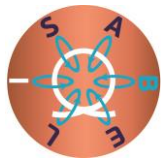
Start date of the project: 1st November 2020

Duration: 48 months

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Version	Modifications	Date	Authors
1.0	First draft	07.02.2023	Eva Bezgousko
1.1	Corrections	17.04.2023	ISABEL Coordination Board
2.0	Final version	20.04.2023	Eva Bezgousko

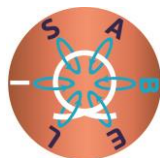


DOCUMENT ABSTRACT

This deliverable 2.3 “Lecture notes EMFL school” is part of WP2 “Community building and membership enlargement”. The deliverable will focus on the dissemination and content of the EMFL school which took place between the 21-25 September 2022, at Kerkrade (Netherlands).

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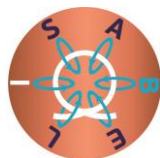
1. Introduction (Presentation and programme)



After a four-year break, we continued the tradition of holding a summer school for the high magnetic field community in Europe. This year, the school was held at Abdij Rolduc, a medieval abbey located on the edge of the town of Kerkrade in the far south-east of the Netherlands, from 21 to 25 September.

The school was dedicated to recent advances in science in high magnetic fields. Renowned speakers covered topics from soft condensed matter, low-dimensional semiconductors, topological matter, strongly correlated electron systems, magnetism, superconductivity, and high magnetic field technology. Two sessions were dedicated to science communication. Furthermore, we organized two sessions in which current research questions and challenges in different fields and experimental techniques were discussed.

The participants of the school, in total 48, were selected primarily among young researchers such as PhD students and postdocs. These included participants working at one of the EMFL laboratories, but also at universities and research institutions in Europe and worldwide. All participants had the opportunity to present their own research results to their peers during three specially dedicated pitch sessions.



Please find below the general information of the event (programme, organizers and speakers):

• Programme

EMFL Summer school, Abdij Hotel Rolduc 21/09 – 25/09

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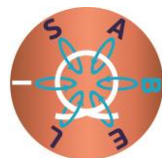
	Wednesday 21/09	Thursday 22/09	Friday 23/09	Saturday 24/09	Sunday 25/09
8					
9		Magnetism and meta-magnetism Toni Helm (Dresden)	Topological Matter I (TIs, Dirac and Weyl SM) Milan Orlita (LNCMI)	Correlated electron systems II (quant. osc., heavy fermions) Ilya Sheikin (LNCMI)	Scanning Tunneling Microscopy Hermann Suderow (UAM)
10		Coffee break	Coffee break	Coffee break	Coffee break
11		Semiconductor nanostructures (2D, 1D, 0D) Saskia Fischer (HU-Berlin)	Correlated electron systems I (superconductivity) Anne de Visser (UvA)	Topological Matter II (topol. superconductivity) Erwan Bocquillon (Cologne)	Emergent materials (What's next?) Anna Isaeva (UvA)
12	Arrival & registration				
13	lunch	lunch	lunch	lunch	lunch box
14	Welcome Magnet technology Frans Wijnens (HFML-FELIX)	Novel semiconductors (perovskites) Paulina Plochocka (LNCMI)	Layered 2D materials (graphene and beyond) Christoph Stampfer (Aachen)	Science communication: lect. Margriet van der Heijden (TUE)	departure
15	Coffee break	Coffee break	Coffee break	Coffee break	
16	Soft condensed matter Hans Engelkamp (HFML-FELIX)	Pitch sessions	Pitch sessions	Science communication: act. Margriet van der Heijden (TUE)	
17					
18	Pitch sessions	Excursion: brewery	Tutorial & discussion Topological matter and beyond	Tutorial & discussion (strongly) correlated electron systems and beyond	
19	dinner	Dinner buffet	dinner	Dinner	
20	barbeque			Farewell party	

• Organising committee

- Alina Maria Deac (HZ Dresden-Rossendorf, Germany)
- Walter Escoffier (LNCMI-CNRS, Toulouse, France)
- Alix McCollam (HFML-FELIX, Radboud University, Nijmegen, the Netherlands)
- Benjamin Piot (LNCMI-CNRS, Grenoble, France)
- Steffen Wiedmann (HFML-FELIX, Radboud University, Nijmegen, the Netherlands)

• Invited Speakers

Erwann Bocquillon	University of Cologne (Germany)	Topological superconductivity
Hans Engelkamp	HFML-FELIX (the Netherlands)	Soft condensed matter
Saskia Fischer	HU-Berlin (Germany)	Semiconductor nanostructures
Margriet van der Heijden	TU Eindhoven (the Netherlands)	Science communication
Toni Helm	HZ Dresden-Rossendorf (Germany)	Magnetism and Metamagnetism



Anna Isaeva	University of Amsterdam (the Netherlands)	Emergent materials
Milan Orlita	LNCMI Grenoble (France)	Topological Matter
Paulina Plochocka	LNCMI Toulouse (France)	Novel semiconductors
Ilya Sheikin	LNCMI Grenoble (France)	Fermi surface and quantum oscillations
Christoph Stampfer	RWTH Aachen (Germany)	Layered 2D materials
Hermann Suderow	Universidad Autónoma de Madrid (Spain)	Scanning tunneling microscopy
Anne de Visser	University of Amsterdam (the Netherlands)	Unconventional superconductivity
Frans Wijnen	HFML-FELIX (the Netherlands)	Magnet technology

2. Event's communication and dissemination

All the information on the event are available on the website below, hosted by the host of the event (HFML): <https://www.hfml.ru.nl/emflschool2022/>.

The announcement was circulated to the EMFL staff, the EMFL user community, shared with collaborators, and distributed within various existing networks with the poster below:

Announcement of the 2nd EMFL Summer School
Science in High Magnetic Fields

21 – 25 September 2022
Kerkrade, the Netherlands



The European Magnetic Field Laboratory (EMFL) summer school is dedicated to recent advances in science in high magnetic fields. Lectures will be given by renowned scientists guiding participants through the various areas of physics, chemistry and material science in high magnetic fields. The school is open to young scientists, PhD students and Postdoctoral researchers. Participants will have the opportunity to present their own results in specially dedicated pitch sessions.



Venue
Hotel Abdij Hotel Rolduc
Heyendallaan 82,
6464 EP Kerkrade,
The Netherlands
You will stay in an Economy Twin Room that is fitted with heating and a sink. The bathrooms are shared and in the hallway.

Confirmed invited speakers and topics

<i>Topological Superconductivity</i> Erwann Bocquillon (Cologne)	<i>Soft condensed matter</i> Hans Engelkamp (HFML-FELIX)	<i>Semiconductor nanostructures</i> Saskia Fischer (HU-Berlin)
<i>Science communication</i> Margriet van der Heijden (TuE)	<i>Magnetism and Metamagnetism</i> Toni Helm (HZDR)	<i>Emergent materials</i> Anna Isaeva (UvA)
<i>Topological Matter</i> Milan Orlita (LNCMI)	<i>Novel semiconductors</i> Paulina Plochocka (LNCMI)	<i>Fermi surface and quantum oscillations</i> Ilya Sheikin (LNCMI)
<i>Layered 2D materials</i> Christoph Stampfer (Aachen)	<i>Scanning tunneling microscopy</i> Hermann Suderow (Madrid)	<i>Unconventional superconductivity</i> Anne de Visser (UvA)
<i>Magnet technology</i> Frans Wijnen (HFML-FELIX)		

Important dates

Registration deadline: 30 June, 2022
Notification of acceptance: early July 2022
EMFL school: 21-25 September 2022
www.hfml.ru.nl/emflschool2022/

Participant fee:

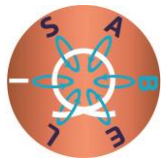
The school is sponsored by EMFL and no participation fees are requested. The participants will be selected based on the quality of submitted abstract and order of submission

Organizing Committee

Alina Maria Deac (HZ Dresden Rossendorf)	Benjamin Piot (LNCMI, Grenoble)
Walter Escoffier (LNCMI, Toulouse)	Steffen Wiedmann (HFML-FELIX, Nijmegen)
Alix McCollam (HFML-FELIX, Nijmegen)	

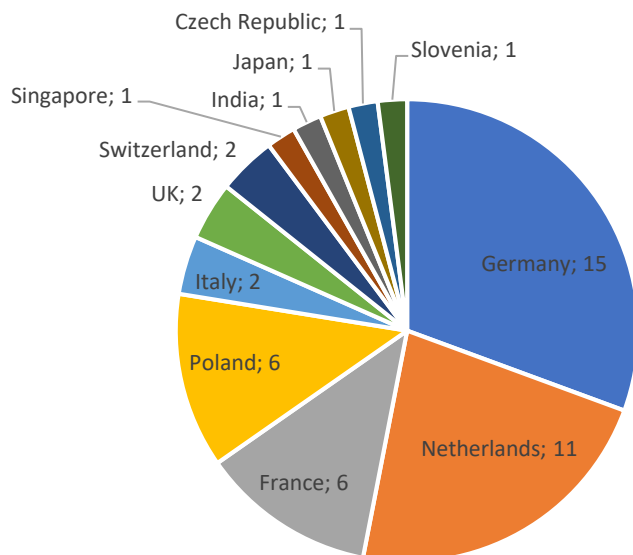
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High Field Magnet Laboratory (HFML-FELIX)

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The presentations of the speakers and administrative sessions are available on the EMFL intranet: <https://emfl.eu/emfl-school-2022-in-kerkrade-the-netherlands/>.

In total, 12 different countries were represented.



Participation per country