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ISABEL

Improving the sustainability of the European Magnetic Field Laboratory

Candidate EMFL member meeting minutes

Start date of the project: 1st November 2020

Duration: 60 months

Project Coordinator: Geert Rikken – CNRS LNCMI (P1 - CNRS)

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Version	Modifications	Date	Authors
1.0	First draft	07/08/2025	Inès DUPON-LAHITTE (compiling reports)

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DOCUMENT ABSTRACT

One aim of the ISABEL project is to develop the user community of the EMFL facilities. There are already communities based on the different scientific themes and disciplines. However, there is also a strong regionally-based networks of scientists engaged in research using moderate magnetic fields produced at several smaller local facilities around Europe. This task aimed to identify users who could benefit from access to high magnetic fields provided by EMFL, inform them of the experimental opportunities within EMFL, as well as past successful collaborations, provide information and training to potential users and also identify other national and international-level large-scale infrastructures using high magnetic fields and foster collaborative work.

For the duration of the ISABEL project, several user meetings were held, at different European locations, so as to attract the users from the region where the events were held.

Here are the combined reports of the United Kingdom, Polish, Swiss, Estonian, Czech and Italian user meetings.

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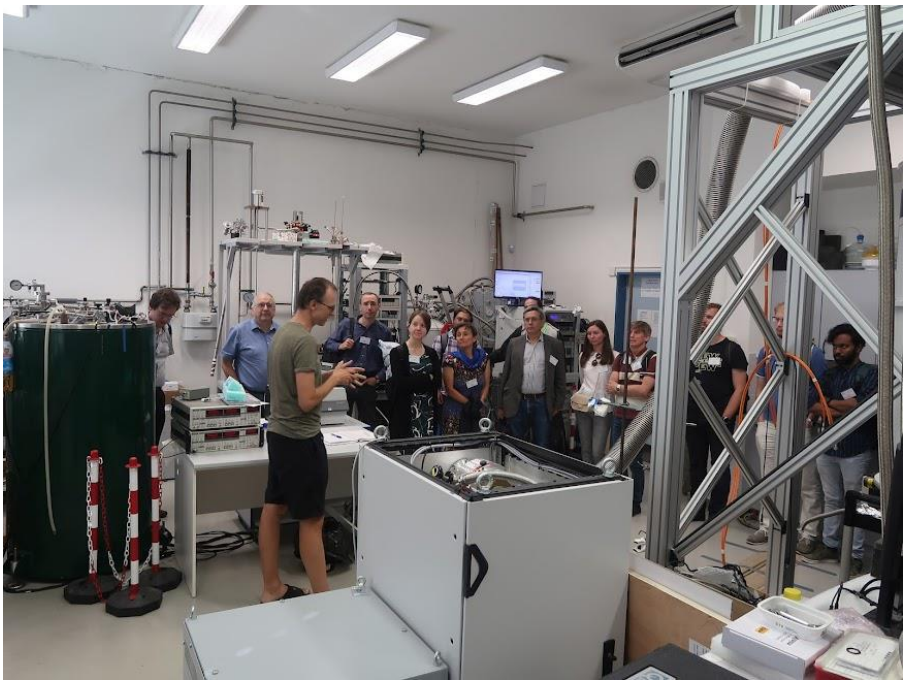
Report on the Regional ISABEL Czech Meeting



September 6-8, 2023, Prague

The meeting (https://magnet2023.kfkl.cz/), supported by the European Union's Horizon 2020 research and innovation program through ISABEL project (No. 871106), was organized at the Faculty of Mathematics and Physics of the Charles University by the MGML research infrastructure. It attracted 38 participants from several universities and research institutions in the Czech Republic (Charles University, Masaryk University, University of West Bohemia, Institute of Physics of the Czech Academy of Sciences) as well as participants from Poland, Germany or France. The program consisted of scientific lectures as well as of lectures introducing EMFL as a whole and also individual high magnetic field facilities in Dresden, Grenoble and Toulouse. The user EMFL operation and modes of access were described. In addition, the participants visited all the laboratories of the MGML´s local research infrastructure.

The possibility of Czech Republic membership in the EMFL was discussed. EMFL representatives informed the Czech scientific community about the technical details of this membership. The Czech scientists showed great interest motivated by several current projects. Unfortunately, the main obstacle is the absence of any funding program in the Czech Republic that would be devoted to Czech membership in international research infrastructures, such as EMFL. It was concluded, that any funding opportunity open should be pursued as there is genuine scientific interest.

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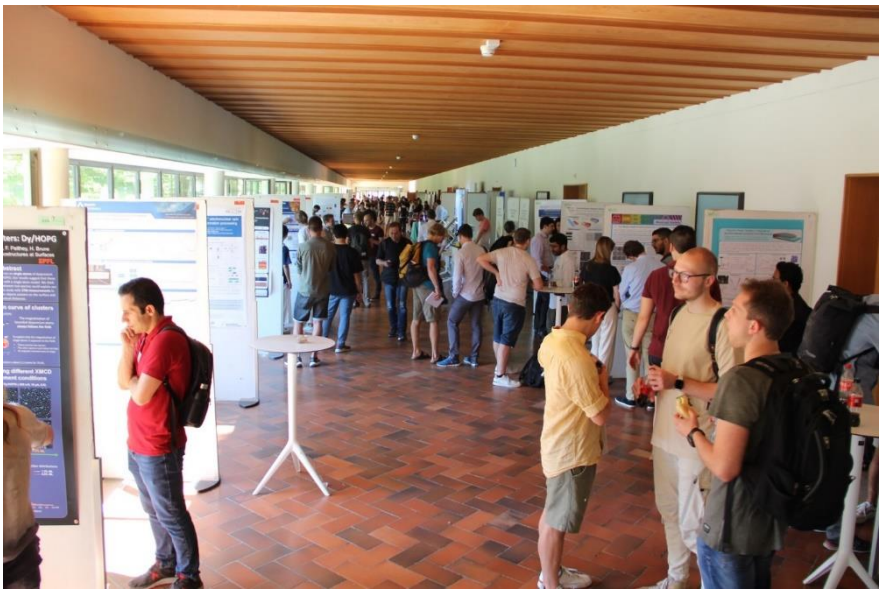
Report on the Regional ISABEL Swiss Meeting



The EU project ISABEL ("Improving the sustainability of the European Magnetic Field Laboratory") aims, with its "Community building and member ship enlargement" work-package, to expand the user community of the High Magnetic Field Laboratory (HMFL) from the different European countries, strengthening therefore its position as an essential facility for the scientific research. The mutual benefits of this collaboration should be the object of a contract between the HMFL and each country, allowing a sustainability of the HMFL over long term and providing a financial support to the infrastructure.

Switzerland benefits from the access to HMFL performing several experiments every year at the different locations of the facility: although this magnet time constitutes a small percentage of the total magnet time, it enables several Swiss experimental groups to perform research at the forefront of the science. This has been the framework leading to the organization of a special session at the annual meeting of the Swiss Physical Society (SPS) and Austrian Physical Society, held in Basel, September 4-8, 2023. This annual gathering has been selected for its large number of participants (more than 500 registrations - limiting at the same time the traveling effort of potential attenders) to showcase the remarkable impact of the HMFL on the Swiss and Austrian condensed matter research. Charles Simon, current director of the HMFL, has reviewed the capabilities of the laboratory and its development plans: one side, the laboratory aims to reach higher magnetic field values and, on the other side, to become more sustainable, in particular with respect to its actual use of electric power. The advantages of accessing large magnetic fields have been illustrated in the scientific talks of Ana Akrap (University of Fribourg) and Matija Čulo (University of Zagreb). The two speakers have discussed magneto-optics and magneto-transport experiments respectively performed at different HMFL locations in order to unveil the electronic band structure of 2D semi-metals and superconductors. In the last invited talk, Alexander Steppke (PSI and University of Zurich) has presented the progress of a collaboration with the HMFL to provide pulsed magnetic fields at the Cristallina end-station of the Swiss Free Electron Laser (SwissFEL) for wide-angle X-ray scattering: the aim is to reach magnetic field up to 40 T within a repetition rate of minutes. The session, chaired by the Swiss representative of the ISABEL project,

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Stefano Gariglio (University of Geneva), has been attended by an audience of ~40 people and sparked several discussions, both on the physics of the 2D systems and on the future of the HMFL. SPS greatly acknowledges the financial support received from ISABEL for hosting this special invited session. A possible integration of the HMFL Swiss research in the program of the SPS annual meeting will be discussed after the success of this first event.

Report on the Regional ISABEL UK meeting

The User Meeting 2024 took place at the School of Physics and Astronomy of the University of Nottingham on the 11th of June 2024. The EMFL Board of Directors chose this venue to underline the continuing collaboration of the UK community with the EMFL through grant agreements between EPSRC (UK) and EMFL, as well as with the three host laboratories in France, The Netherlands, and Germany.

In total, 40 participants registered to the meeting. Prof Amalia Patanè received a separate EPSRC grant for coordinating and strengthening links between the UK and the EMFL. Members of ISABEL attended the meeting to discuss network activities and the needs of a broad user community in the EU.

The User Meeting included the EMFL prize ceremony and two scientific sessions. During those sessions, the users highlighted some of their most recent research. The User Committee meeting also took place, chaired by Prof. Raivo Stern (NICPB, Tallinn, Estonia). Finally, and for the first time, the User meeting included a session allowing industry partners to present their activities and interest in high-magnetic-field technologies. During this session, Dr John Burgoyne from Oxford Instruments plc and Dr M'hamed Lakrimi from Siemens Magnet Technology gave inspiring talks on the importance of magnet technologies in healthcare, energy fusion and automotive industry.

During the EMFL User Meeting, Dr. Elena Blundo received the EMFL prize 2024. Prof. Dr. Jochen Wosnitza, chair of the EMFL prize committee, presented the prize in a traditional small prize ceremony that introduced Dr. Blundo. This ceremony was then followed by a lecture from Dr. Blundo. The EMFL prize was established in 2009 and recognizes outstanding achievements of early-career researchers

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related to research in all disciplines utilizing high magnetic fields. Dr. Blundo received her PhD in Physics in January 2023 from the Department of Physics of Sapienza University of Rome. Currently, she is a distinguished postdoc fellow at the Walter Schottky Institut, at the Technical University of Munich. The prize recognizes Dr. Blundo's work related to the use of high magnetic fields in complex optical-spectroscopy experiments on two-dimensional (2D) crystals. She investigated the electronic and mechanical properties of 2D materials, such as monolayers and heterostructures of transition-metal dichalcogenides (TMDs), hexagonal boron nitride, nano-porous graphene, III-V nanowires, and perovskites.

Report on the ISABEL Italian meeting

The 2025 Italian EMFL User Meeting was held in Lecce from June 16th to 18th 2025 and gathered EMFL representatives from the founding laboratories and researchers from the international EMFL community, the Italian magnetism community with members of the Italian Association of Magnetism (AIMagn), and institutional delegates. The event marked an important step in consolidating Italy's role within the European Magnetic Field Laboratory (EMFL) and advancing the creation of **EMFL.it** as the national joint research unit involving laboratories active in magnetism.

The meeting combined scientific presentations, strategic discussions, infrastructure visits, and community planning sessions, with attention on a coordinated Italian presence within EMFL and involving PNRR-funded research infrastructures.

The first day (June 16th) was dedicated to EMFL SelCom Meeting.

On June 17th, there was the EMFL User meeting with Scientific Sessions & EMFL Community Activities. The main conference day, held at Studium 2000 – University of Salento, opened with institutional greetings and an EMFL introductory lecture by Prof. Jochen Wosnitza.

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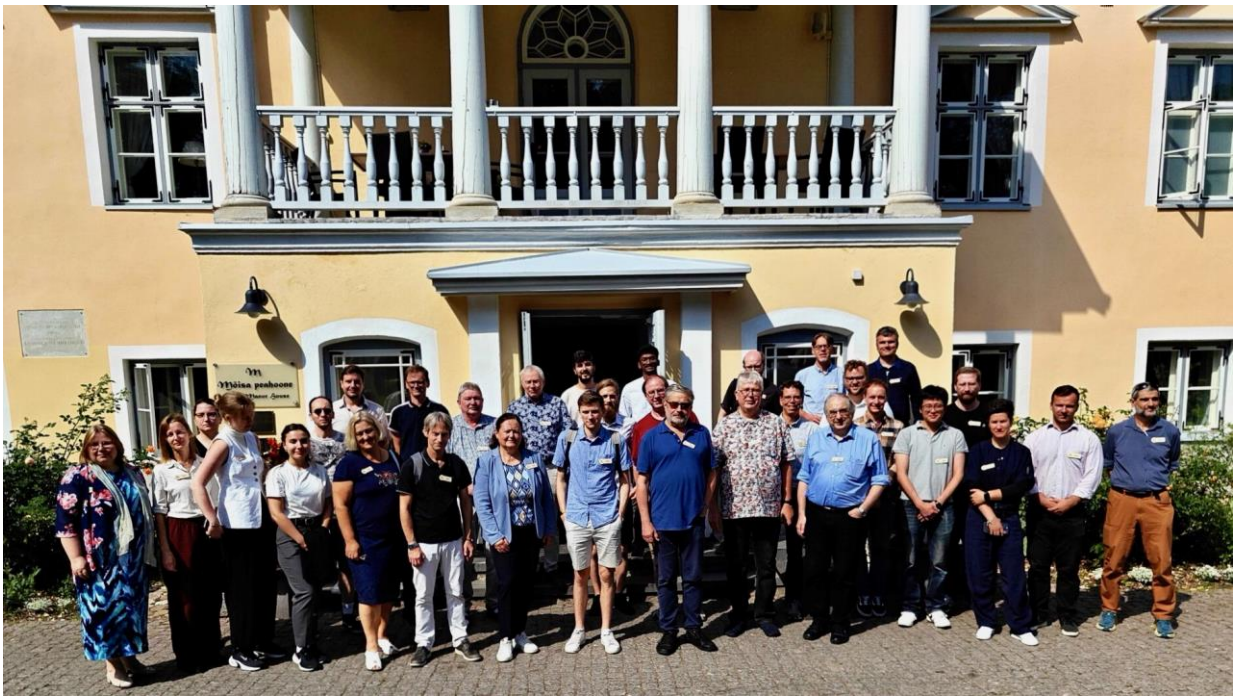
The final day (June 18th) focused on Italian community and infrastructure with a discussion on the implementation roadmap for EMFL.it Joint Research Unit.

The meeting hosted more than **40 participants**, including:

- Representatives of all EMFL founding labs (HLD-Dresden, LNCMI-Grenoble/Toulouse, HFML-Nijmegen);
- Members of Italian universities, CNR institutes and INFN sections;
- Young researchers, PhD students and postdocs.

Report on the Regional ISABEL Nordic-Baltic Meeting (Estonia)



The meeting "ISABEL Nordic-Baltic Regional Meeting" took place in Estonia, Tallinn and Vihula Manor from July 28th until August 1st 2025. A group photo taken at the front door of the Vihula Manor around noon of July 29th picturing 32 of 36 participants is presented above.

Baltic partners there was a renewed link to EMFL from Lithuania with possibility of extension to more of its Universities in Vilnius and Kaunas. Latvian representative promised to take news and cooperation options to most of dominating Universities in Riga. From Scandinavia we failed to attract a dominant representation we hoped for – for both the peak of vacation season as well as for some overlapping and coinciding international meetings (Rare Earth Conference in Japan). Swedish participant had strong links to NHMFL in Tallahassee and found fresh collaboration paths with several labs of EMFL.

For Estonia, participants from Universities and our Research Agency ETAg expressed their growing interest toward experimental capabilities at EMFL labs and envisioned next steps toward Estonian full partnership in EMFL to be possibly realized over next decade.

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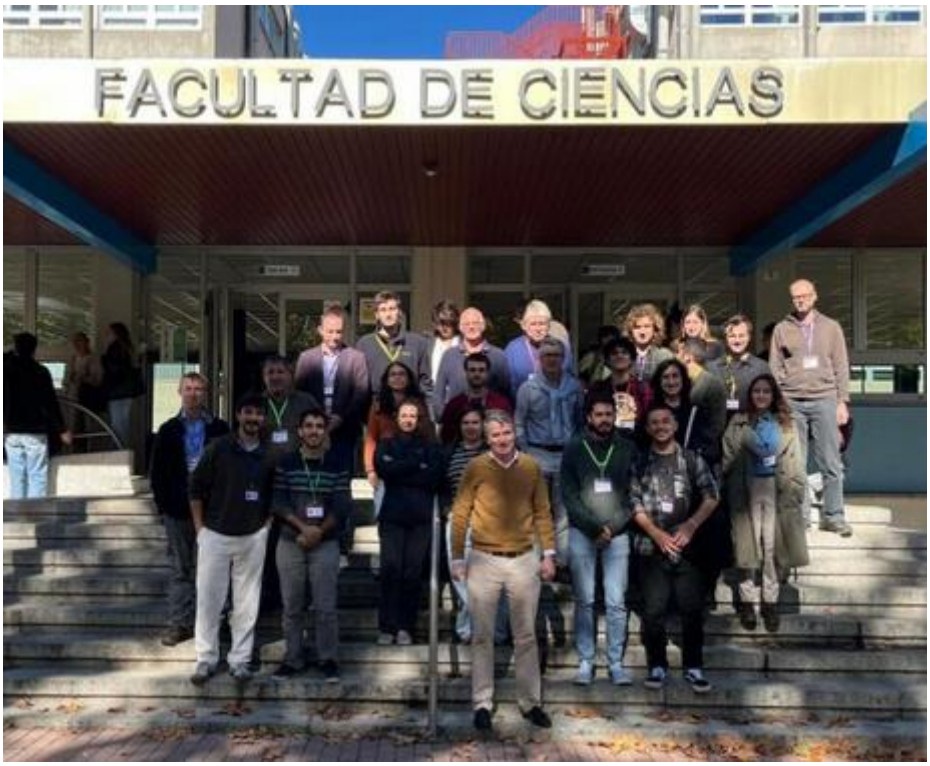
In various discussions, all the participants of the meeting expressed their satisfaction with the scope and results of the ISABEL project. There was a clear desire and willingness to apply for a new EU project with similar priorities (TNA, new access modes, expansion of the EMFL partnership, etc.) in the near future (e.g., EMFL Horizon-INFRA-2025-01-SERV call).

Report on the Regional ISABEL Spanish Meeting



The regional meeting was held on 23rd and on 24th October 2025, with the participation of 32 researchers from Spain (21), France (4), UK (3), Netherlands (1), Estonia (1), Czech Republic (1) and Poland (1). There were 72% male and 28% female participants. Talks were given by 66% male and 33% female. The EMFL was represented by Charles Simon, who gave an overview of the capacities of the EMFL and the present situation of the hybrid magnet efforts in Grenoble. Pierre Pugnat could unfortunately not join us, but was in contact with Charles Simon about the talk and the presentation of the magnet. Fabienne Duc presented the efforts made to measure in large scale facilities as neutron scattering and Clement Faugeras activities in pulsed magnetic fields.

Among the frequent users of EMFL, Raivo Stern presented NMR efforts, Maciej Molas work made in two-dimensional crystals, Antony Carrington in better understanding the cuprates, Ioana Paulescu on new insight into the superconducting properties of FeSe, Jan Prokleska on U based compoundes and Daniel Braithwaite on the problem of superconductivity in UTe2. In addition, the efforts to understand magnetic materials using photoemission and scanning microscopy techniques in Nottingham were presented by Brian Kiraly.

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Among the national participants, there were two contributions presenting results obtained at high field facilities (Toulouse). One (Fátima Martín-Hernández) where the magnetic properties of geological materials were examined, obtaining relevant information about dates of archeological material. Furthermore, Ona Mola presented efforts made to better understand pinning in cuprate superconductors, also with data obtained in LNCMI Toulouse. Other contributions (4 posters and 9 talks) of Spanish scientists were centered in reviewing the properties of graphene (Paco Guinea), of van der Waals heterostructures, of metrology in quantum Hall systems, on hydrodynamic flow in graphene, on magnetic two-dimensional van der Waals systems, on superconductor-ferromagnet hybrids and on Scanning Tunneling Microscopy up to magnetic fields of 20 T in UTe2 and in pnictide materials. The efforts of the Madrid group to do experiments in high field facilities were presented as a poster and during the laboratory visits. The laboratory visits included the 20/22 T magnet with Scanning Tunneling Microscopy and further 17 T and other high magnetic field equipment available at the UAM through the dual access mode. We also went to the machine shops to see the possibilities at UAM, which include a metal 3D printer (EOS M290, working volume 250x250x325 mm), CNC lathe and mill, water cutting, He liquefaction and other relevant installations.

The meeting presented an overview of the possibilities of EMFL, and of the recent interests of Spanish groups in measurements at high magnetic fields. The gathering demonstrated the presence of an active community of researchers. This meeting will be used to apply for open networking calls and for possible calls to contribute to the EMFL effort. We will also share within the available possibilities the magnetic field equipment in Spain.

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Annex

Program of Czech Regional User Meeting

Wednesday, September 6

14:00 Welcome (P. Javorský)

14:05 J. Wosnitza: EMFL - a Distributed User Facility

14:40 W. Knafo: State-of-the-art experiments under pulsed magnetic fields combined with other extreme environments at the LNCMI-Toulouse

15:15 M. Vališka: High-field study of UTe2

15:50 coffee

16:20 visit of the MGML facility in Troja campus

Thursday, September 7

9:30 Y. Skourski: EMFL User Operation

10:05 M. Orlita: Magneto-optics of layered antiferromagnets

10:40 D. Hovančík: Probing magnetism and spin-wave gap in 2D van der Waals insulators.

11:15 coffee

11:45 S. Zherlitsyn: Selected acoustic effects in the Solid State

12:20 A. Babiński: The effect of magnetic field on excitons in transition metal dichalcogenide monolayers.

12:55 lunch

14:00 posters

15:00 J. Prokleška: MGML research infrastructure

Followed by the visit of MGML facility in Cukrovarnická campus

Friday, September 8

9:30 Visit of the MGML facility in Karlov campus (Ke Karlovu 5)

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Program of Swiss Regional User Meeting

Time	ID	MAGNETIC FIELDS FOR MATERIALS RESEARCH *Chair: Stefano Gariglio, Université de Genève*
17:00	681	**Present and Future scientific opportunities in EMFL (European Magnetic Field Laboratory)** *Charles Simon, Laboratoire national des champs magnétiques intenses (LNCMI) CNRS, 25 avenue des Martyrs, FR-38042 Grenoble cedex 09 CNRS, 143 Avenue de Rangueil, FR-31400 Toulouse* This presentation will review the present and future opportunities in EMFL for high magnetic fields experiments up to 200T in pulsed fields and 45 T in continuous fields. Some scientific examples will be shown in this presentation, as well as the procedure to request access to high magnetic fields. A fully superconducting magnet of 40 T should be also available in future. EMFL in a European facility located in four sites: Grenoble, Nijmegen, Toulouse and Dresden. EMFL is supported by the European program ISABEL to attract new users especially from Switzerland.
17:30	682	**Landau level spectroscopy as a window into topological semimetals** *Ana Akrap, Department of Physics University of Fribourg, Ch. du Musée 3, CH-1700 Fribourg* A strong magnetic field confines band electrons to a discrete set of Landau levels. The material's band structure is directly linked to the energy spectrum of these Landau levels. With infrared light, we can excite transitions of carriers from one level to another, and these are called inter- Landau level transitions. Since the early 1950s, this Landau level spectroscopy has been widely employed as an extremely sensitive probe of semimetal and semiconductor band structures. I will give an overview of our recent progress on Landau level spectroscopy of Dirac and Weyl semimetals. Through advanced techniques, we can resolve intricate complexities of their bands, all while discovering new physics. I will present our new analysis of highly detailed inter- Landau level transition maps in extreme magnetic fields. I will discuss how novel approaches allows us to further exploit the rich magneto-optical spectra, and gain deep knowledge of topological semimetals.
18:00	683	**Exploring quantum matter under extreme conditions at the SwissFEL Cristallina endstation** *Alexander Steppke* *Laboratory for X-ray Nanoscience and Technologies, Paul Scherrer Institut, Villigen PSI, & Laboratory for Quantum Matter Research, University of Zürich* Brilliant, ultrashort, and coherent X-ray free-electron laser (FEL) pulses are primarily used for investigation of dynamics at the inherent time and length scale of atoms. In addition, the unprecedented peak brilliance also allows for single-shot experiments that are not feasible at other X-ray sources. The latter will be used to image quantum many-body states under extreme conditions at the Cristallina endstation of SwissFEL's hard X-ray beamline. In particular, millisecond high magnetic field pulses will be synchronized to the femtosecond X-ray pulses, enabling X-ray diffraction at both high magnetic field strengths and low temperatures. In this talk, I will review our commissioning progress reaching magnetic field of up to and beyond 40 T, and elaborate on the path towards user operation after the commissioning phase.

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18:30	**684**	**Dual nature of charge carriers in the iron-based superconductor $FeSe_{1-x}S_x$** *Matija Čulo [1], Jake Ayres [2], Salvatore Licciardello [3], Maarten Berben [3], Yu-Te Hsu [3], Roemer Hinlopen [2], Shigeru Kasahara [4], Yuji Matsuda [5], Takasada Shibauchi [6], Nigel Hussey [2,3]* *[1] Institut za fiziku, Bijenička cesta 46, HR-10000 Zagreb, Croatia* *[2] H. H. Wills Physics Laboratory, University of Bristol, Tyndall Avenue, Bristol BS8 1TL, UK* *[3] High Field Magnet Laboratory (HFML-EMFL) and Institute for Molecules and Materials, Radboud University, Toernooiveld 7, 6525 ED Nijmegen, Netherlands* *[4] Research Institute for Interdisciplinary Science, Okayama University, 3-1-1 Tsushimanaka, Kita-Ku, Okayama 700-8530, Japan* *[5] Department of Physics, Kyoto University, Sakyo-Ku, Kyoto 606- 8502, Japan* *[6] Department of Advanced Materials Science, University of Tokyo, Kashiwa, Chiba 277-8561, Japan* The discovery of high-temperature superconductivity in materials that contain iron was accepted with surprise in the condensed matter community, since it had been widely believed that iron with a large magnetic moment is harmful to the emergence of superconductivity. Among these iron-based superconductors, $FeSe_{1-x}S_x$ attracted a special attention because of its unique phase diagram, in which superconductivity emerges from a pure electron nematic state, therefore providing an opportunity to study the interplay between nematicity and unconventional superconductivity. The transition to the nematic state in the parent compound FeSe occurs at around 90 K and is followed by the transition to the superconducting (SC) state at around 10 K. This nematic transition can be strongly suppressed by applying a hydrostatic pressure which in turn leads to the stabilization of an antiferromagnetic state. The nematic transition can be strongly suppressed also by changing Se with S, in which case it is believed that it terminates as a nematic quantum critical point (QCP) at the critical S-substitution $x \approx 0.17$ inside the SC state. Here we present our detailed resistivity magnetoresistance and Hall effect study on $FeSe_{1-x}S_x$, conducted on a series of single-crystalline samples with $0 \leq x \leq 0.25$ spanning the nematic QCP, in high magnetic fields (H) up to 38 T, at very low temperatures (T) down to 300 mK and at high pressures up to 15 kbar. Our results indicate that the normal (non-SC) state of $FeSe_{1-x}S_x$ is highly unconventional and that the charge transport there can be decomposed into two distinct components. One component exhibits the standard Fermi liquid behavior such as T_2 resistivity, H_2 magnetoresistance and H-linear Hall response. The other component shows strong signatures of strange metal behavior, the most important of which are T-linear resistivity, quadrature scaling with H-linear magnetoresistance at high H and anomalous Hall response with an exponential tail-off at high H. The strange metal component becomes very pronounced in vicinity of the nematic QCP and weakens significantly with moving away from it either by changing S-substitution, or by applying pressure. Such complex behavior possibly points towards a dual nature of charge carriers in $FeSe_{1-x}S_x$, triggered by the presence of quantum critical nematic fluctuations that selectively influence only certain parts of the Fermi surface.
19:00		***END; Transfer to Dinner***
19:30		***Conference Dinner***

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Program of UK User Meeting

Tuesday, 11 June 2024, EMFL User Meeting

School of Physics & Astronomy, University of Nottingham, building 22 in the map
https://www.nottingham.ac.uk/sharedresources/documents/mapuniversitypark.pdf

Start	End		Room
09:30	10:00	Arrival and coffee	B23
PART I (Chairperson, Amalia Patanè, Un. of Nottingham)			B1
10:00	10:10	***Welcome*** Amalia Patanè, Un. of Nottingham, UK	
10:10	10:30	***Introduction*** Charles Simon, CNRS, France	
10:30	11:00	***EMFL Prize and Lecture*** Jochen Wosnitza, EMFL-HLD, Germany	
PART II (Chairperson, Jochen Wosnitza, EMFL-HLD, Germany)			B1
11:00	11:20	***Magneto-hydrodynamics in stars*** Susanne Horn, Coventry, UK	
11:20	11:40	***Quantum nature of charge transport in inkjet-printed graphene revealed in high magnetic fields up to 60T*** Oleg Makarovskiy, Un. of Nottingham, UK	
11:40	12:00	***Distinct switching of chiral transport in kagome metals*** Chunyu Guo, Max Planck Inst. for the Structure & Dynamics of Matter, Germany	
12:00	12:20	***Optical spectroscopy of new two-dimensional materials - experimental opportunities at the University of Warsaw*** Adam Babinski, University of Warsaw, Poland	
12:20	14:00	Buffet lunch and Poster session	B23
PART III (Chairperson, Raivo Stern, Nat. Inst. of Chem. Physics & Biophysics, Estonia)			B1
13:20	14:00	***User Committee and Survey*** Raivo Stern, Nat. Inst. of Chem. Physics & Biophysics, Estonia	
14:00	14:20	***Feedback session with Directors of the EMFL*** Raivo Stern, Nat. Inst. of Chem. Physics & Biophysics, Estonia	
PART IV (Chairperson tbc)			B1
14:20	14:40	***Evidence for spin-mediated superconductivity in n-doped cuprates*** Caitlin Duffy, LNCMI Toulouse, France	
14:40	15:00	***Unconventional Superconductivity in UTe2 in extreme conditions*** Georg Knebel, CEA Grenoble, France	
15:00	15:20	***Studies of hydride superconductors in pulsed magnetic fields up to 80 T using special high-pressure DACs*** Dmitrii Semenok, HPSTAR, Beijing, China	
15:20	15:40	***Superconductivity: enabling transformative technologies*** Antony Carrington, Un. of Bristol	
15:40	16:10	Coffee break and Poster session	B23
PART V (Chairperson tbc)			B1
16:10	16:30	***Magnetic field technologies*** John Burgoyne, Oxford Instruments plc	
16:30	16:50	***Magnetic field technologies*** M'hamed Lakrimi, Siemens Magnet Technology	
16:50	17:00	***Final remarks on funding opportunities and closure*** Amalia Patanè, Un. of Nottingham	

Program of Italian User Meeting

16.06.2025 - EMFL SelCom Meeting

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12:00 - 14:00 Lunch

14:30 - 17:00 EMFL SelCom Meeting

17:00 Visiting Lecce node of the EMFL&IRIS research infrastructures on magnetism and applied superconductivity (Department of Mathematics and Physics UniSalento/ Institute of Nuclear Physics (INFN)/ National Research Council (CNR))

17.06.2025 – EMFL User Meeting

09:00 - 09:45 Arrival and coffee: Ex Monastero Olivetani

09:45 - 10:00 Transfer to Aula 7, Building 6, Studium 2000, University of Salento

Part I. Welcome, introduction and EMFL Prize and Lecture:

10:00 - 10:05 Welcome Prof. Giuseppe Maruccio

10:05 - 10:15 Institutional Welcome

10:15 - 10:30 Introduction Prof. Jochen Wosnitza

10:30 - 11:00 EMFL Prize and Lecture. Prof. Jochen Wosnitza

Part II: Scientific Presentations Session I:

11:00 - 11:20 Can one observe quantum oscillations in thermal conductivity of phonons?
Dr. Stanisław Galeski

11:20 - 11:40 MagnetoPL spectroscopy of intra- and interlayer excitons in highly aligned transition metal dichalcogenide heterobilayers
Dr. Alessandro Surrente

11:40 - 12:00 Correlated Insulating States in Twisted Double Bilayer Graphene under Ultrahigh Field
Dr. Ning Ma

12:00 - 12:20 Strange metal and spin fluctuations in cuprate superconductors
Dr. David Le Boeuf

12:20 - 14:00 Buffet Lunch and Poster session

Part III: User committee, Survey and Feedback:

14:00 - 14:20 User Committee and Survey
Prof. Raivo Stern

14:20 - 14:40 Feedback sessions with Directors of EMFL
Prof. Raivo Stern

Part IV: Scientific Presentations Session II:

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14:40 - 15:00 Exploring magnetocaloric materials with pulsed magnetic fields
Dr. Benedikt Beckmann

15:00 - 15:20 Simultaneous parameters probing: a crucial tool to understand first-order phase transition kinetics on magnetocaloric materials
Dr. João Horta Belo

15:20 - 15:40 An EPM Project QuAHMET: Quantum anomalous Hall effect materials and devices for metrology
Dr. Susmit Kumar

15:40 - 16:00 Unconventional Magnetism: from loop currents to altermagnetism
Dr. Federico Mazzola

16:00 - 17:00 Coffee break and Poster session

Part V: Conclusions and Final Remarks:

17:00 - 17:10 AiMagn – Italian Magnetism Association
Dr. Gaspare Varvaro

17:10 - 17:30 Emergence of the Correlated Ferromagnetic Glass in hybrid Co/Molecule bilayers
Dr. Valentin Alek Dediu

17:30 - 18:00 Italian infrastructures on Magnetism and Applied Superconductivity and Lecce EMFL-IRIS Node
Prof. Daniele Martello, Dr. Anna Grazia Monteduro

18:00 - 18:15 Final remarks on funding opportunities and closure
Prof. Giuseppe Maruccio

18.06.2025 – ITALIAN Community Meeting

9:30- 9:50 EMFL-IRIS infrastructure joint node in Lecce / UniSalento/INFN/CNR
Prof. Giuseppe Maruccio

9:50-10:10 Facilities for Magnetic Characterization at IMEM – CNR
Dr. Francesca Casoli

10:10-10:30 Exploring magnetism and transport properties at nM2-Lab: from fundamental research to applied science

Dr. Gaspare Varvaro

10:30-11:30 *coffee break*

11:30-13:30 Open Discussion about next steps to implement EMFL.it as joint research unit and development of an Italian magnetism distributed research infrastructure (moderated by Prof. G. Maruccio)

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Program of Nordic-Baltic Regional User Meeting

July 29th – Tuesday

Time	Activity / Speaker	Affiliation	Title – click on title for abstract
9:00-10:30	Charter bus from hotel Park Inn Central lobby To Vihula Manor		
11:00-11:10	R. Stern	Organizer, NICPB/KBFI	Welcome!
11:10-11:30	U. Nagel	Dicector and research professor of NICPB/KBFI	About NICPB/KBFI and our research
11:30-12:00	M. Kirm	Academician, physics professor of Tartu University	Creation of the Estonian Research Infrastructures Roadmap
12:00-13:00	Lunch break		
13:00-14:30	Session I	Chair: Raivo Stern	
13:00-13:30	J. Wosnitza	Chair of the BoD of EMFL, EMFL-HLD, HZDR, Dresden, Germany	EMFL – a Distributed User Facility
13:30-14:00	R. Lortz	LNCM, CNRS-UGA-UPS-INSA-EMFL, Grenoble, France	Future scientific opportunities in LNCMI
14:00-14:30	P. Christianen	High Magnetic Field Laboratory Nijmegen, Nijmegen, The Netherlands	HFML-FELIX and Lead-free Halide Double Perovskites
14:30 -15:30	Coffee break; check-in to rooms		
15:30-17:00	Session II	Chair: Jochen Wosnitza	
15:30-16:00	H. Kühne	HLD/HZDR	NMR in pulsed magnetic fields – recent developments
16:00-16:30	Y. Ihara	Hokkaido University	Pulsed-field NMR study of field-induced magnetic states in square cupola antiferromagnet Pb(TiO)Cu4(PO4)4
16:30-17:00	S. Krämer	LNCMI-G	High magnetic field research using nuclear magnetic resonance: options and instrumental challenges
17:30 -20:00	Buffet dinner & local activities		

July 30th – Wednesday

Time	Activity / Speaker	Affiliation	Title
9:00-10:30	Session III	Chair: Rolf Lortz	
9:00-9:30	A. Babinski	Faculty of Physics, University of Warsaw	Optical properties of hafnium disulfide (HfS2)
9:30-10:00	A. Rydh	Stockholm University	Specific heat in quantum critical systems: Multi-flavor criticality and Kramers doublets
10:00-10:30	N. Cottam	University of Nottingham	Quantum Hall Effect in Hybrid Heterostructures Based on Graphene
10:30-11:00	Coffee break		
11:00-12:00	Session IV	Chair: Marco Kirm	
11:00-11:30	N. Žurauskienė	FTMC Vilnius	Advanced Research Activities in High Magnetic Fields at the FTMC
11:30-12:00	R. Aav	Tallinn University of Technology	Studies related to rare earth elements in center of excellence SOURCES
12:00-12:30	Session V: Poster flash talks 5x6min	Chair: Riina Aav	
12:00-12:08	Martin Jakoobi	NICPB/KBFI	Studying ZnO/ZnS heterostructures by solid-state NMR (reveals mechanistic aspects of ZnO sulfidation process)
12:08-12:15	Joosep Link	NICPB/KBFI	Magnetic Phase Boundaries in β-TeVO4: a 125Te-NMR Study
12:15-12:23	Riho Rästa	NICPB/KBFI	Magnetic Structure of Pb(TiO)Cu4(PO4)4: 31P, 65,63Cu NMR
12:23-12:30	Alex Boldin	NICPB/KBFI	Spin Dynamics and Symmetry Transitions in Cr2O3 Probed by NMR
12:30-14:30	Lunch + Poster Session		
14:30-16:30	Session VI	Chair: Hannes Kühne	
14:30-15:00	A. Tsirlin	University of Leipzig	Proximate spin liquids
15:00-15:30	R. Ramazashvili	Université de Toulouse, CNRS, Laboratoire de Physique Théorique	Electric-dipole spin resonance in antiferromagnetic conductors
15:30-16:00	B. Beckmann	University of Dortmund	Pulsed Magnetic Fields: A Key to Understanding Magnetocaloric Materials
16:00-16:20	J. Rumeu	University of Madrid	Rotating reduced size STM for high magnetic fields experiments (longer)
17:00	Bus to Käsmu		
17:30-20:00	Workshop Dinner		
20:00	Bus from Käsmu		

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July 31st – Thursday

Time	Activity / Speaker	Affiliation	Title
9:00-10:30	Session VII	Chair: Steffen Krämer	
9:00-9:30	K. Kalam	University of Tartu	Magnetic properties of atomic layer deposited oxide thin films
9:30-10:00	K. Dziubinska	NICPB/KBFI	Sodium NMR: from pros and cons to material science and hardware developments
10:00-10:30	I. Reile	NICPB/KBFI	Parahydrogen as a tool to study chemical composition below the detection limit of magnetic resonance.
10:30-10:45	R. Stern	Concluding remarks	Closing
10:45-12:00	Check Out		
12:00-14:00	Lunch		
14:00-15:30	Bus back to Tallinn Park Hotel		

August 1st – Friday

Time	Activity / Speaker	Affiliation	Title
9:00-10:30	Breakfast and Check-Out from hotel Park Inn Central		
10:30-11:00	Charter bus from hotel Park Inn Central lobby To NICPB/KBFI		
11:00-11:10	R. Stern	Organizer, NICPB/KBFI	Welcome!
11:10-12:40	R. Stern	NICPB/KBFI tour	

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Program of Spanish Regional User Meeting

Thursday, 23rd October		
9:20 - 9:30	**Opening**	**H. Suderow**, Chairman
9:30-10:30	**Session I. Chair: H. Suderow**	
09:30	*Presentation of EMFL: News and opportunities*	**C. Simon** LNCMI, Grenoble, France
10:00	*Nuclear magnetic resonance (NMR) experiments in high magnetic fields*	**R. Stern** KBFI, Tallinn, Estonia
10:30-11:00	**Coffee Break + Poster session**	
11:00-12:30	**Session II. Chair: D. Braithwaite**	
11:00	*Investigating new states of matter by neutron diffraction in high pulsed magnetic fields*	**F. Duc** LNCMI, Toulouse, France
11:30	*Imaging and manipulating magnetic structure from device to atomic scales*	**B. Kiraly** University of Nottingham, UK
12:00	*Spin flop in natural goethite crystal in the 4-300 K range*	**F. Martín-Hernández** Universidad Complutense de Madrid, Spain
12:30	*Scanning Tunneling Spectroscopy of FeSe under in-plane magnetic fields*	**J.D. Bermúdez** Universidad Autónoma de

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		Madrid, Spain
12:45	*Direct observation of vortex liquid droplets in $KCaFe_4As_4$*	**O. Bou** Universidad Autónoma de Madrid, Spain
13:00-14:30	**Lunch**	
14:30-17:25	**Session III. Chair: E. Herrera**	
14:30	*Connecting high-field and high-pressure superconductivity in UTe_2*	**D. Braithwaite** Université Grenoble Alpes, France
15:00	*Critical points in Uranium compounds*	**J. Proldeska** Charles University, Prague, Czech Republic
15:30	*Surface charge density wave in UTe_2*	**P. García Talavera** Universidad Autónoma de Madrid, Spain
15:45	*Signatures of edge states in antiferromagnetic Van der Waals Josephson junctions*	**C. González-Sánchez** Universidad Autónoma de Madrid, Spain
16:00	*Hidden field-induced magnetism inside the nematic phase of iron-chalcogenide superconductors*	**I. Paulescu** University of Oxford, UK
16:15	*Disentangling different contributions to spin-orbit coupling in epitaxial superconductor-ferromagnet hybrids with spin symmetry filtering*	**P. Tuero** Universidad Autónoma de Madrid, Spain
16:30-17:30	**Laboratory visit**	

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Friday, 24th October		
9:30-10:30	**Session IV. Chair: C. Simon**	
09:30	*Unravelling the normal state of cuprate superconductors with high field*	**A. Carrington** University of Bristol, UK
10:00	*Superconductivity in graphene stacks*	**F. Guinea** IMDEA Nanoscience, Madrid, Spain
10:30-11:00	**Coffee Break + Poster session**	
11:00-13:00	**Session V. Chair: R. Stern**	
11:00	*High field study of critical current in overdoped and nanocomposites REBCO films grown by TLAG*	**O. Mola** ICMAB- CSIC, Barcelona, Spain
11:30	*Extremely high excitonic g-factors in 2D crystals by alloy-induced admixing of band states*	**M.R. Molas** University of Warsaw, Poland
12:00	*A twisted view on magnetic Van der Waals heterostructures*	**S. Mañas-Valero** Delft University of Technology, Netherlands
12:30	*Magnetic order in an air-stable frustrated Van der Waals magnet*	**C. Faugeras** LNCMI, Grenoble, France
13:00-14:30	**Lunch**	
14:30-15:45	**Session VI. Chair: H. Suderow**	
14:30	*Influence of carrier density and disorder on the quantum Hall plateau widths in epitaxial graphene*	**M. Menghini** IMDEA Nanoscience, Madrid, Spain
15:00	*Hydrodynamic electron flow in antidot graphene superlattices*	**A. Pérez** Universidad de Salamanca, Spain
15:30	**Closing**	**H. Suderow**, Chairman