

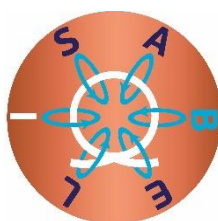
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## ISABEL

### Improving the sustainability of the European Magnetic Field Laboratory

#### D2.2 USER COMMUNITY MEETING MINUTES

#### REPORT - 4



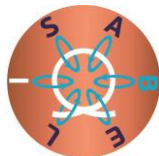
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**Project Coordinator:** Geert Rikken – CNRS LNCMI (P1 - CNRS)

**Contact:** [isabel@lncmi.cnrs.fr](mailto:isabel@lncmi.cnrs.fr)

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1.0	First draft – User Meeting	23/09/2024	Inès DUPON-LAHITTE
2.0	Final version	27/09/2024	Inès DUPON-LAHITTE

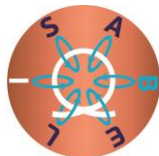


## Document abstract

The deliverable is part of Work Package 2 “Community building and membership enlargement” and Task 2.2 “User Community meetings”. This deliverable is a report of the fourth Annual EMFL User meeting, which took place on June 11<sup>th</sup> 2024 in Nottingham.

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## 1. Introduction & User-meeting program

The aim of the yearly EMFL User Meeting is to exchange ideas and experiences, to present scientific results obtained in the EMFL facilities, and to discuss possibilities for a further improvement of the facilities' infrastructure and performance. During the meeting, newest developments of the EMFL facilities as well as invited scientific talks from selected users were presented.

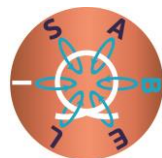
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The User Meeting 2024 took place at the School of Physics and Astronomy of the University of Nottingham on the 11<sup>th</sup> of June 2024. The EMFL Board of Directors chose this venue to underline the continuing collaboration of the UK community 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.

EMFL User Meeting 2024 – Programme		
Start	End	
09:30	10:00	Arrival and coffee
<b>PART I</b>		
10:00	10:10	<b>Welcome</b> Amalia Patanè, Un. of Nottingham, UK
10:10	10:30	<b>Introduction</b> Charles Simon, CNRS, France
10:30	11:00	<b>EMFL Prize and Lecture</b> Jochen Wosnitza, EMFL-HLD, Germany
<b>PART II</b>		
11:00	11:20	<b>Magneto-hydrodynamics in stars</b> Susanne Horn, Coventry, UK
11:20	11:40	<b>Quantum nature of charge transport in inkjet-printed graphene revealed in high magnetic fields up to 60T</b> Oleg Makarovskiy, Un. of Nottingham, UK
11:40	12:00	<b>Distinct switching of chiral transport in kagome metals</b> Chunyu Guo, Max Planck Inst. for the Structure & Dynamics of Matter, Germany
12:00	12:20	<b>Optical spectroscopy of new two-dimensional materials - experimental opportunities at the University of Warsaw</b> Adam Babinski, University of Warsaw, Poland
12:20	14:00	Buffet lunch and Poster session
<b>PART III</b>		
13:20	14:00	<b>User Committee and Survey</b> Raivo Stern, Nat. Inst. of Chem. Physics & Biophysics, Estonia
14:00	14:20	<b>Feedback session with Directors of the EMFL</b> Raivo Stern, Nat. Inst. of Chem. Physics & Biophysics, Estonia

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<b>PART IV</b>		
14:20	14:40	<b>Evidence for spin-mediated superconductivity in n-doped cuprates</b> Caitlin Duffy, LNCMI Toulouse, France
14:40	15:00	<b>Unconventional Superconductivity in UTe<sub>2</sub> in extreme conditions</b> Georg Knebel, CEA Grenoble, France
15:00	15:20	<b>Studies of hydride superconductors in pulsed magnetic fields up to 80 T using special high-pressure DACs</b> Dmitrii Semenov, HPSTAR, Beijing, China
15:20	15:40	<b>Superconductivity: enabling transformative technologies</b> Antony Carrington, Un. of Bristol
15:40	16:10	Coffee break and Poster session
<b>PART V</b>		
16:10	16:30	<b>Magnetic field technologies</b> John Burgoyne, Oxford Instruments plc
16:30	16:50	<b>Magnetic field technologies</b> M'hamed Lakrimi, Siemens Magnet Technology
16:50	17:00	<b>Final remarks on funding opportunities and closure</b> Amalia Patanè, Un. of Nottingham

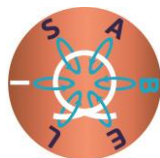
## 2. Welcome and presentations

The User Meeting started with introductory lectures by Prof. Amalia Patanè and Prof. Charles Simon, chair of the EMFL Board of Directors, who presented recent developments within ISABEL and the EMFL. The scientific talks that followed covered a broad range of research enabled by the use of high magnetic fields. This included magneto-hydrodynamics in stars, optical spectroscopy and transport in two-dimensional materials, all the way to unconventional superconductivity and extreme high-pressure studies of hydride superconductors.

## 3. Contents of the meeting

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 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 research on the quantum Hall effect in two-dimensional materials. This document reflects only the author's view. The European Commission is not responsible for any use that may be made of the information it contains.



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.



*Figure 1 - Group photo of the participants*



*Figure 2 - Dr. Elena Blundo being presented the EMFL Prize 2024 by Prof. Jochen Wosnitza*