

PSI Center for Accelerator Science
and Engineering

IMMW23 Welcome - Introductory Remarks

06-11 October 2024, Bad Zurzach & PSI

Stéphane Sanfilippo Paul Scherrer Institute

Welcome to IMMW23 workshop



Aargau (Aare province): Rivers & wellness & and castles



Birth : 1803

Surface : 1400 km²

Population : 695 000

Capital : Aarau

3 rivers: Aare, Reuss
und Limmat

3 main regions
(Baden, Fricktal, Zurzach)



International Committee

- Marco Buzio-CERN
- James Citadini - CNPEM
- Joseph DiMarco - FNAL
- Jui-Che Huang - NSRRC
- Animesh Jain - APS
- Gael Le Bec - ESRF
- Jordi Marcos - CELLS
- Edward Rial – BESSY
- Stéphane Sanfilippo- PSI
- Zachary Wolf - SLAC

Local committee (PSI)

- Stéphane Sanfilippo (Chair)
- Silvia Bacher (Organisation)
- Stefan Keller (Finance)
- Rebecca Riccioli
- Carolin Zoller
- Giuseppe Montenero

Second workshop at PSI of a triptych dedicated to magnet modeling and magnet tests



PAUL SCHERRER INSTITUT
PSI

HTS MODELLING WORKGROUP

CHART
Swiss Accelerator Research and Technology

hts2024.eu

HTS Modelling Workshop 2024

June 10 – 13
Parkhotel Bad Zurzach & PSI
Switzerland

- Innovative methods and tools for modelling large-scale HTS systems
- Multiphysics problems, coupled & uncoupled
- Applications in large instruments, such as high field magnets, medical magnets and accelerator magnets

IEEE CSC
Council on Superconductivity

esas
SUPERCONDUCTIVITY FOR APPLIED SUPERCONDUCTIVITY

RENAISSANCE FUSION

SIRMAPHI
SUPERCONDUCTING INSTRUMENTATION FOR MAGNETS

COMSOL

QUANSCIENT

10/06-13/06/2024

PAUL SCHERRER INSTITUT
PSI

23rd International Magnetic Measurement Workshop (IMMW 23)

Oct 6 – 11, 2024
Parkhotel Bad Zurzach & PSI
Switzerland

<https://indico.psi.ch/event/15256/>

- Overview of Magnetic Measurements
- Sensors
- Measurement Reports
- Instruments
- Methods
- Fiducialization and Alignment

CHART
Swiss Accelerator Research and Technology

KY

metrolab
magnetic precision has a name

SENIS
magnetic & current measurement

HEXAGON

06/10-11/10/2024

PSI | EPFL

5th Superconducting Magnets Test Facility Workshop (SMTF 5) and 3rd Instrumentation and Diagnostics for Superconducting Magnets Workshop (3 IDSM)

Mar 30 – April 04, 2025
Parkhotel Bad Zurzach & PSI & SPC
Switzerland

<https://indico.psi.ch/event/16393/>

- Status and future development of superconducting magnets test facilities
- Current and future diagnostic instrumentation, sensors, methods and data analysis techniques for LTS and HTS

CHART
Swiss Accelerator Research and Technology

30/3-04/04 2025

Exchange among researchers and experts on:

- *Equipment and techniques used to measure and characterize the magnetic fields,*
- *Equipment and techniques to fiduzialise (align) the magnets,*
- *A particular focus on accelerator magnets and insertion devices*

Topics covered:

- *Overview of on-going projects around the world-wide measurement labs*
- *Sensors*
- *Fluxmeters*
- *Acquisition software, measurements and Fiducialization techniques*
- *Measurement Reports on magnets and insertion devices*

Context: 4th generation SR light sources & Superconducting elements

- *Magnetic measurement techniques of new types of accelerator magnets*
- *Last generation of Insertion Devices (Higher Field, shorter period, smaller gap)*
- *Transfer of know how to industry*

Time plan of the event

06 October 24 (Monday)-11 October 24 (Friday)



Sunday evening : Welcome reception & apéro, (Park Hotel)

Monday & Tuesday : Workshop day 1 & 2 (presentations)-Park Hotel

Wednesday

- Transfert to PSI (Villigen)
- Morning : PSI presentation (Hans Braun) + **Poster session**
- Afternoon : Oral Session + Lab tour (3 hours)
- Evening : Social Dinner (Habsburg Castle) – Transfer back to Zurzach

Thursday & Friday Morning

- Oral contributions - Park Hotel
- End of the workshop : Friday MIDDAY

Conference Room for the oral sessions (Park Hotel)



Plenum room 150 m²

Concert layout 100 persons (without
table)

- 2 screens
- moderation material

Coffee breaks just outside the room

Booth from sponsors outside the
room



No hybrid sessions

Many thanks to our sponsors !!!!



Many thanks to the sponsors for contribution and support



Swiss Accelerator
Research and
Technology



Workshop dinner:
Habsburg castle (1020)



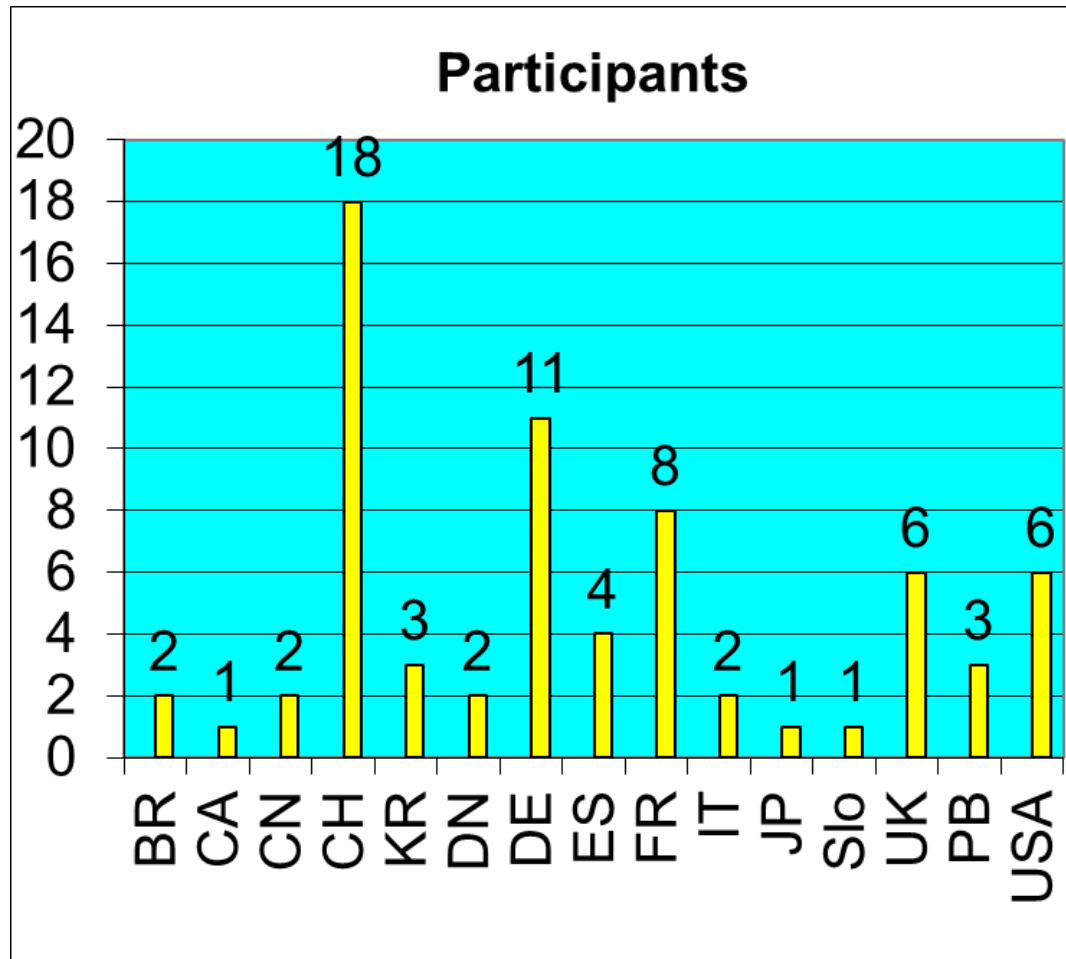
Talks + Booth at the conference room entrance

Participants



71 participants (thank you for your interest !)

15 countries - An authentic international workshop



Snapshot of the program



Abstract : 47 abstracts*

Submitted on indico

-34 talks (**20+10 min**)

-13 Posters

5 topics

-Overview of the activities

- Devices: Sensors & Fluxmeters

-Measurement reports

-Hardware and Software

-Application and techniques

Posters session of 1h30 at PSI
Wednesday morning , preparation
during coffee break (~30 min)

Lunch : 12h00-14h00

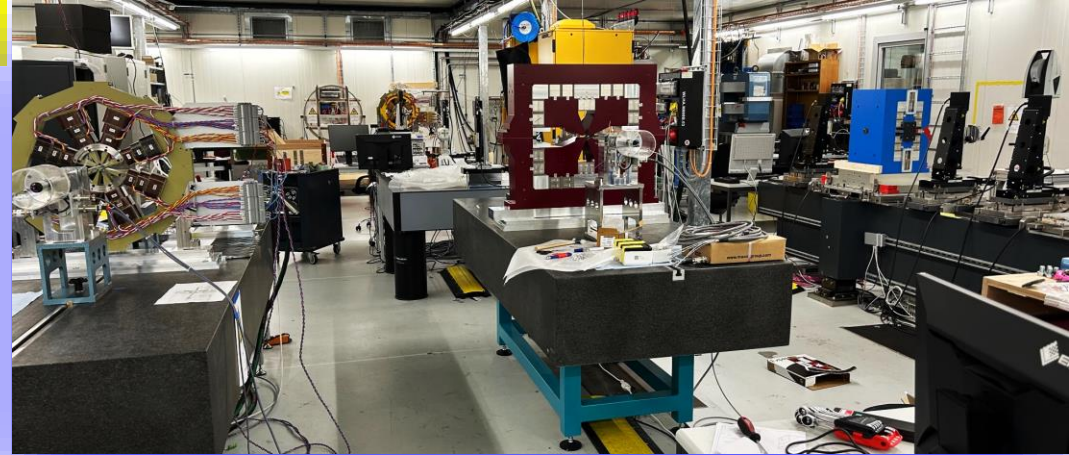
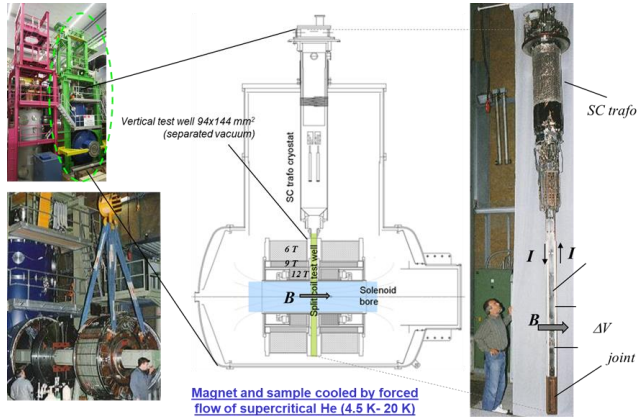
Sessions: 9h00-12h00

14h00-17h00

Date	Place	Program
Monday	Bad Zurzach	Overview
Tuesday	Bad Zurzach	<ul style="list-style-type: none">• Devices• Meas. Reports
Wednesday	Paul Scherrer Institut	<ul style="list-style-type: none">• PSI overview• Poster session• Visits• Social Event
Thursday	Bad Zurzach	<ul style="list-style-type: none">• Meas. Reports• Hard Software• Appli&Tech
Friday	Bad Zurzach	<ul style="list-style-type: none">• Hard Software• Photo• Conclusions• End of Workshop

**Linking the IMMW workshop to a peer review journal: Metrology (ISSN 2673-8244). special issue on 'Advances in Magnetic Measurements'- contact Prof. N. Sammut, nicholas.sammut@um.edu.mt
https://www.mdpi.com/journal/metrology/special_issues/325603DE6K*

SULTAN (Swiss Plasma Center-EPFL)



Magnetic measurement lab

SC Magnet lab (CHARTMagDev)



Swiss Light Source 2.0

4 stations

groups of ~ 18 persons

Visits : 3 hours in total



Welcome to the Dorint Parkhotel Bad Zurzach



Public WLAN – WiFi at Dorint Parkhotel Bad Zurzach

Free SMS login (valid 6 months)

Network: Park_Hotel Bad Zurzach

Browser: www.pwlan.ch

Password via SMS



Lunch and Dinner: Included!

Following meals are included in the registration fee:

Monday, Tuesday and Thursday: 12:00 lunch and 19:00 dinner

Wednesday: lunch at PSI and conference dinner at Habsburg (*see PSI day*)

Friday after the event: Sandwich lunch

Parkhotel will provide a form with 3 meal options for lunch and dinner:

▪ Meat ▪ Fish ▪ Vegetarian

Please mark your preference every day before the end of the coffee break in the morning.

Hot springs (Thermalbad)

If you booked hotel accommodation at Parkhotel, you can enter the hot springs free of charge

PSI day on Wednesday, October 9th, 2024



09:15 Departure by bus in front of the Parkhotel to PSI

Presentations and breaks in the morning and afternoon

11:00 Poster Session: Please bring your posters!

15:15 PSI Lab visits: Please wear flat shoes (no heels).

Please contact Stéphane or Silvia if you apply to one of the following categories, as access to certain areas may be forbidden:

Pregnant women; persons equipped with pacemaker, defibrillator, electronic medicine dispenser, hearing aid or metal implant, person with reduced mobility or otherwise incapacitated, minors under the age of 16.

18:30 Departure in front of the PSI auditorium for the conference dinner at Habsburg castle

22:30 Departure from Habsburg to Parkhotel Bad Zurzach



IMMW16 at PSI : 26-29 October 2009



Louis Walckiers (CERN)
head of the Committee till 2013

International Advisory Committee

Heiner Brueck (DESY)
Joseph DiMarco (FNAL)
Joel Chavanne (ESRF)
Stephane Sanfilippo (PSI)
Animesh Jain (BNL)
Louis Walckiers (CERN)
Zach Wolf (SLAC)

Four days of workshop

Participants : 79 from 12 countries

55 contributions of 15' minutes

IMMW at PSI15 years after

The SwissFEL large-scale facility



Aramis : 2016; Athos : 2018

Proton Therapy Center : Gantry III



Gantry III facility : 2018

Park Innovaare



Innovation Park (2024)

SLS2.0



Tunnel closure (12/2024)

IMMW at PSI15 years after

2008



2013



October 2024



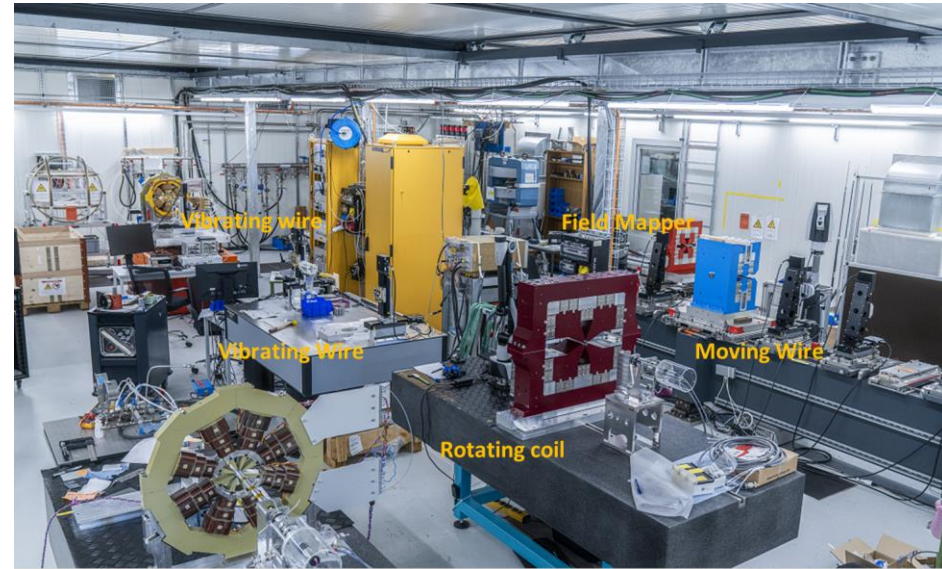
IMMW at PSI15 years after



Magnet lab in 2009



Magnet labs in 2024

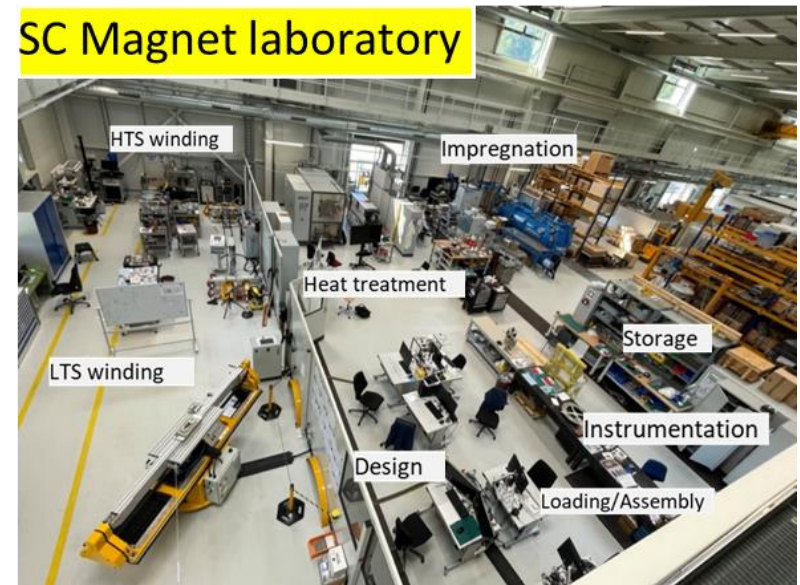


Magnet labs in 2024

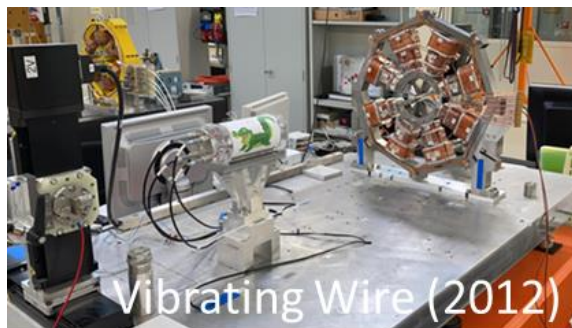
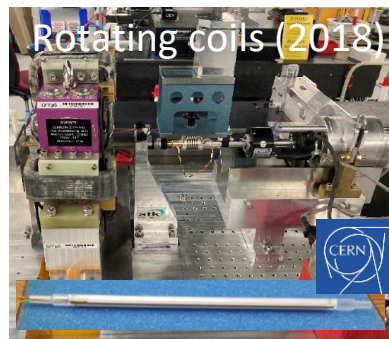
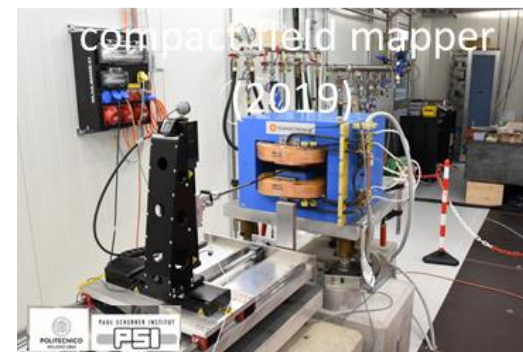
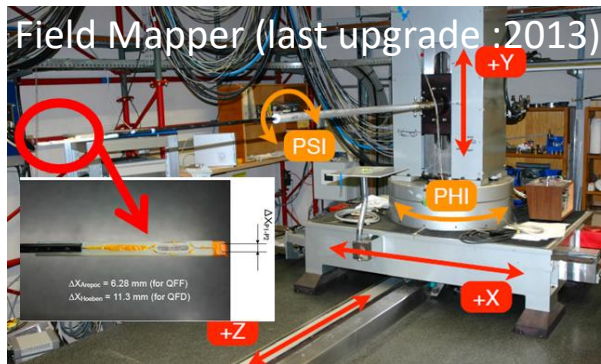
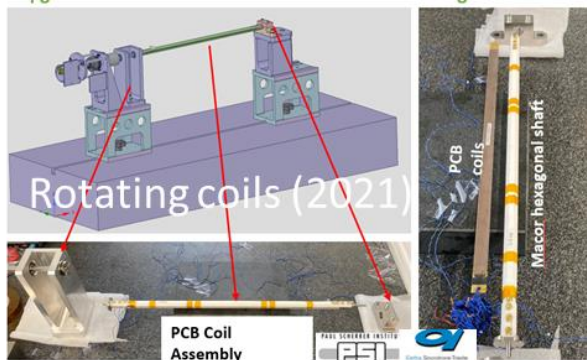
Cryogen free magnet test station



SC Magnet laboratory



IMMW at PSI15 years after



Accuracy : 1/1000

Reproducibility : 1/10000

Axis : < 30 micrometers

Specila thanks to Animesh, Joel, Vjeran, Zachary -(almost) retired



- Innovation in MM techniques
- Technical achievements
- Dedication and expertise
- Enrich our community→transmission to next generation (lectures)
- Contribution to the IMMW workshops



Thank you for enlightening us throughout all these years!

Wishing you a fulfilling and joyful retirement

