



Wir schaffen Wissen – heute für morgen

Beam Meets Magnets and Undulators-II

Welcome Introduction

Stéphane Sanfilippo and Andreas Streun

- *EuCard-2 networking activity* : “**break the barriers between traditional communities** and foster a coherent and multi-disciplinary approach to the complex and multiform issues of upgrading highly sophisticated infrastructures”
- *Task 5.3 : eXtreme Performance rings (XRing)* “XRing will bring **together experts in beam dynamics with specialists of magnets** and collimation to arrive at optimum upgrade solutions with risk mitigation ”
- *Pioneering workshop* : “**Beam Dynamics meets Magnets**” Dec 2013 GSI-Darmstadt

Topics (not exhaustive)

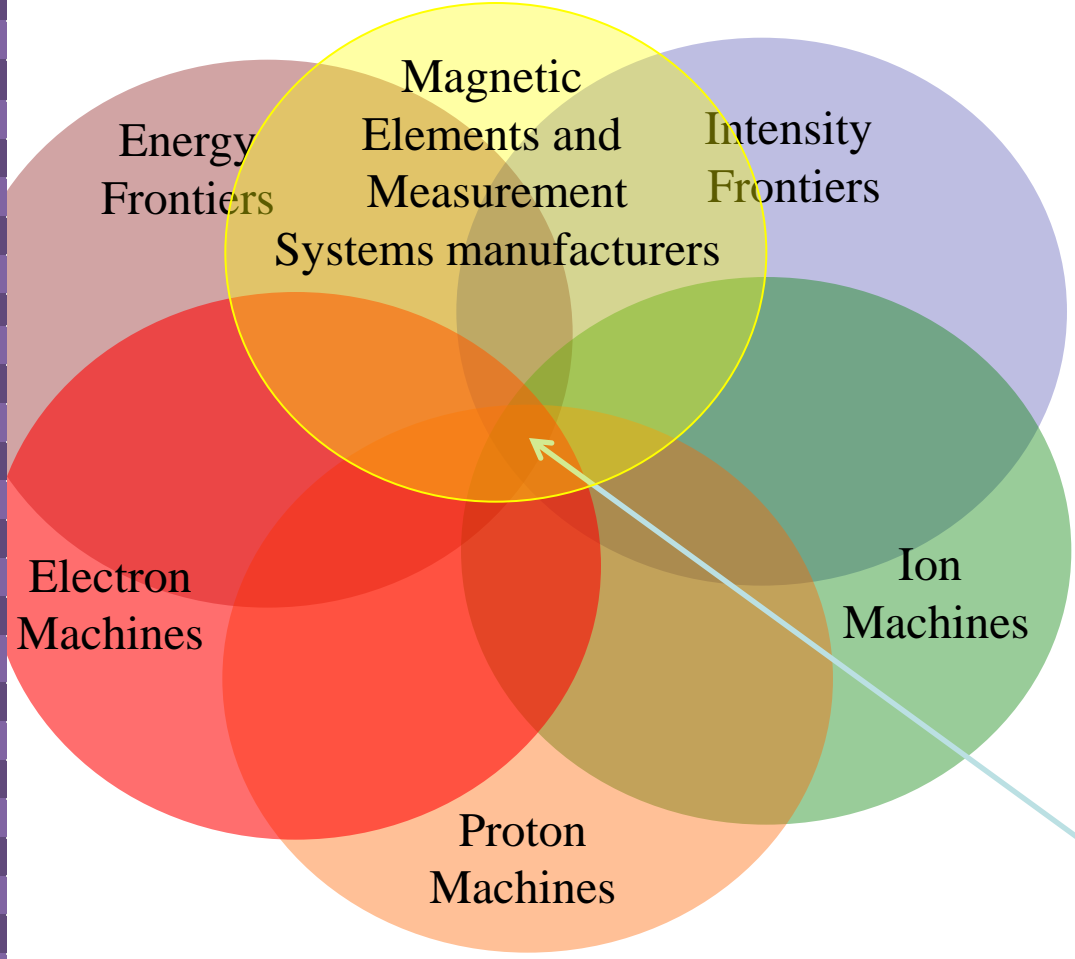
Objectives

- | | |
|--|---|
| <ul style="list-style-type: none"> • <i>Beam optics - magnet & ID *specifications</i> • <i>Non linear dynamics - multipoles, fringe fields</i> • <i>Beam parameters (i.e. emittance) - magnet & ID design & fabrication</i> • <i>High intensity beams - magnets with high bending fields & high ramp rates</i> • <i>Beam based measurements - magnetic measurements and magnetic models</i> • <i>Beam based alignment – magnetic alignment & fiducialisation methods</i> | <ul style="list-style-type: none"> • <i>Information (State of art)</i> • <i>Overcome accelerator limitations</i> • <i>Support for performance optimization</i> • <i>Groundwork for future high performance machines</i> • <i>Share technical experience, exchange and constructive discussions</i> • <i>Develop collaborations, create synergies among communities</i> • <i>Integrate efforts of laboratories, institutes universities and companies</i> |
|--|---|

Beam meets Magnets-II

Establishing the coherence between Beam, Design & Construction, Measurements, Installation & Operation)- S. Russenschuck

ANL	1
Backcock Noell	1
BNL	1
CEA	4
CERN	9
Cockcroft I.	1
ENEA Trieste	1
ESRF	1
FZ Jülich	2
GSI	5
INFN	1
Jai Oxford	1
Jefferson Lab.	1
KEK	1
KIT	2
LBNL	4
LNLS	2
MaxLab	3
MIT	1
NIRS	2
PSI	19
Radia Beam Tech	2
Scanditronix	1
Senis	2
Sigmaphi	3
SLAC	2
STFC	3
Tesla	3
Uni.Geneva	1
Uni. Malta	1
Varian Med. System	1



Participation of institutes (24) and companies (7) representing a large spectrum of the accelerator community

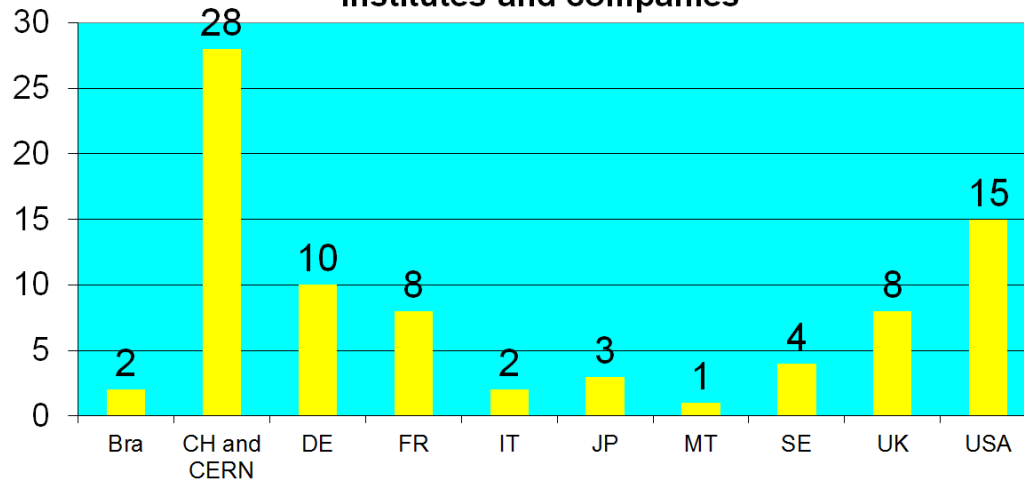
Beam Dynamics meets Magnets

G. Franchetti (2013)

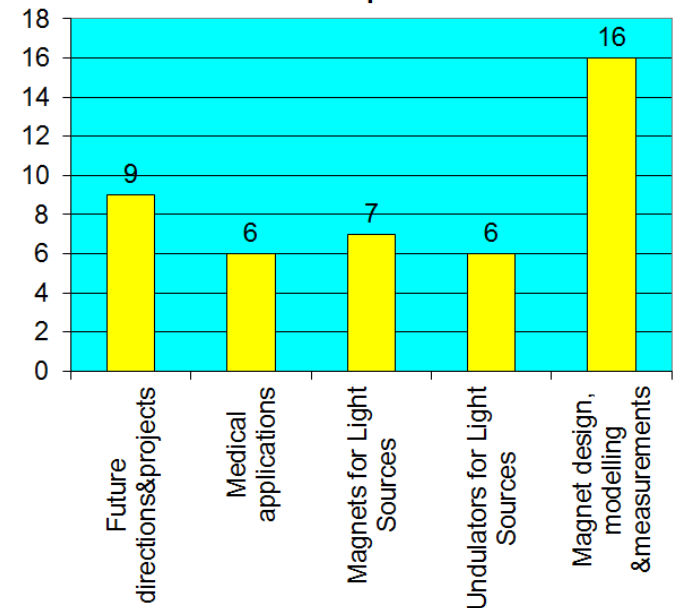
Beam meets Magnets-II

- **Participants : 81 from 10 countries (19 from PSI)**
- **Exciting program with 44 contributions classified in 4 sessions (future directions , medical applications, Magnets and Undulators for future Light sources , magnet design& measurements and modelling)**
- **Part of the workshop dedicated to the (future) specific projects of the Paul Scherrer Institute: Proton Therapy, SLS 2.0 and Swiss Free Electron Laser.**
- **Each session followed by 40 min time for discussion**
- **Three summary sessions on Thursday morning**

Institutes and companies



Topics



Rich program has a cost : risk to be short of time
To all speakers : please limit the talks to the proposed schedule

Day 1 (Park Hotel Bad Zurzach)

- a.m. Future directions (overview of future projects)
- p.m. Medical applications

Day 2 (Park Hotel Bad Zurzach)

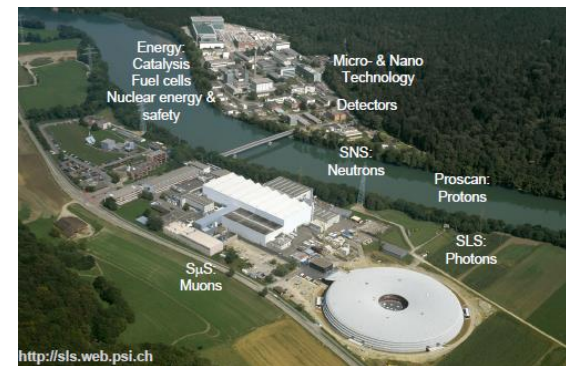
- Magnets and Undulators for future Light Sources (1)
- Magnets and Undulators for future Light Sources (2)

Day 3 (Paul Scherrer Institut)

- a.m. PSI presentation and Visit
- p.m. Magnet design, modelling and measurements (1)
- evening: workshop dinner

Day 4 (Park Hotel Bad Zurzach)

- a.m. Magnet design, modelling and measurements (2)
- a.m. Summary Sessions



End of the workshop : Thursday 4 December at 12h 30.

Four groups to visit four sites (Wednesday 10h30-12h30)



Magnet Measurement Laboratory



Undulator laboratory



SwissFEL injector



Swiss Light Source

Thank to the four sponsors/support for their contribution

Workshop supported by EuCARD² program

Enhanced European Coordination for
Accelerator Research & Development



4 sponsors

SENIS_{GmbH} Zürich, Hall Device



Tesla Engineering, Storrington (UK),
Magnet Activities



Vannes (FR), Magnet Activities



Babcock Noell GmbH

Würzburg, Germany, Power systems

- ***Lunches & Dinners:***

- ✓ ***Organized in this Hotel (Mo/Tue) and at PSI (Wed)***

- ✓ ***Lunch served at 12h30 and dinner served at 19h30***

- please select your menu before coffee break***

- ***Wednesday : Transport Hotel-PSI-Restaurant Baden-Hotel organized***

- Group photo : Wednesday 3 December at 12h30 after the PSI Visit.***

- ***Free access to the thermal baths for the persons in the Hotel***

- ***Wifi connection everywhere (instructions in the handouts)***

- Please switch off your mobile during the sessions***

**For questions/suggestions please contact:
Stephane Sanfilippo (+41 78 883 97 99),
Andreas Streun (+41 76 437 08 64) or Maria Guarino**

Have a nice & successful Workshop!



Thomas Stearns Eliot, USA & UK
(26 September 1888 – 4 January 1965)

We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time

*Thomas Stearns Eliot in the Poem
'The Four Quartets' (Little Gidding-V)*