

NMI3-II access to BER II

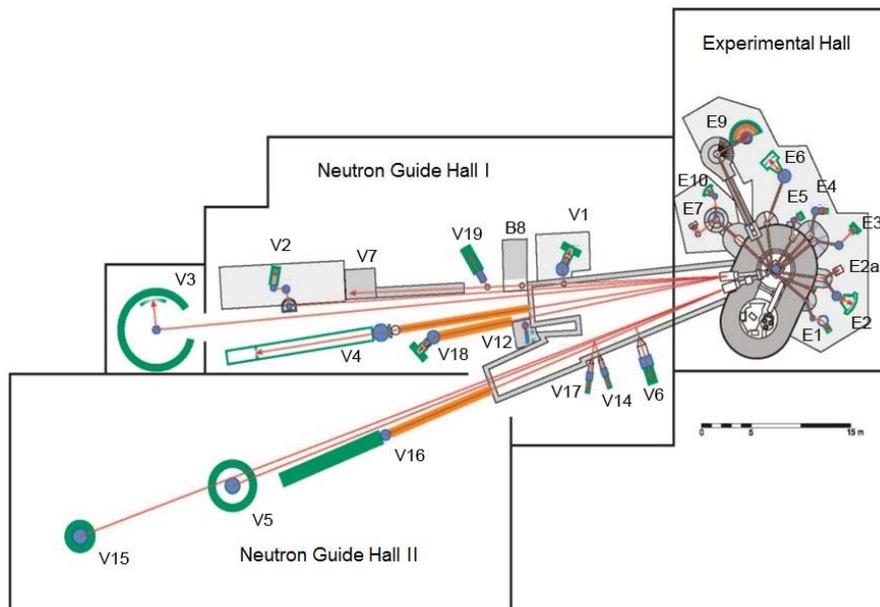
Thomas Gutberlet
HZB User Coordination Neutrons



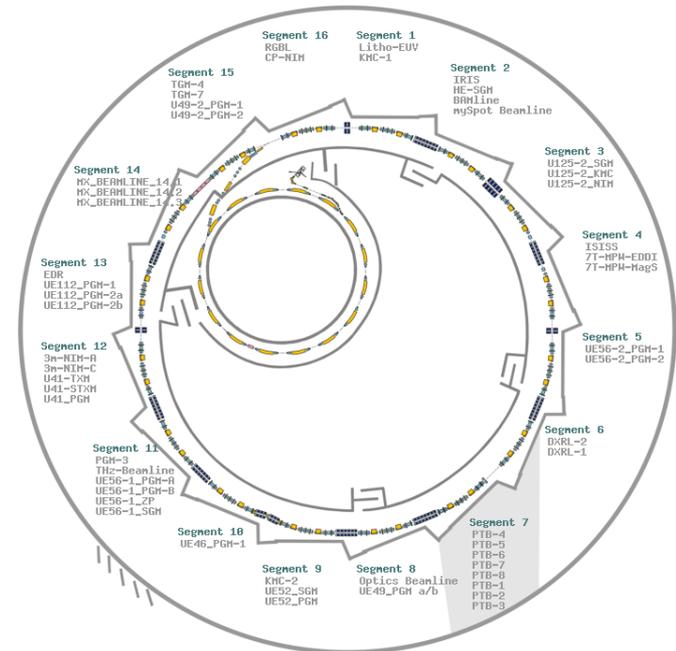
HZB offers access to neutron and photon instrumentation at the neutron facility BER II and synchrotron source BESSY II



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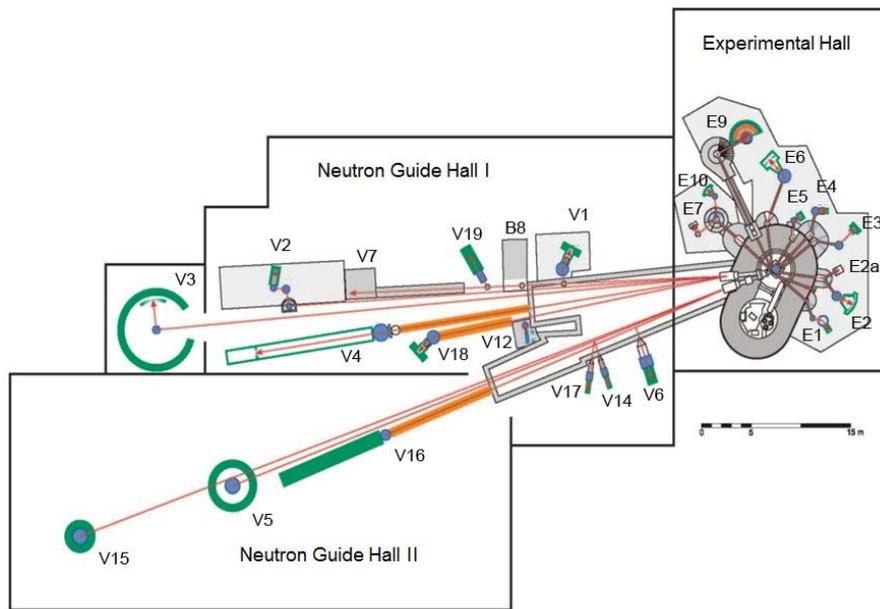


11 thermal instruments
15 cold instruments
2 x-ray instruments

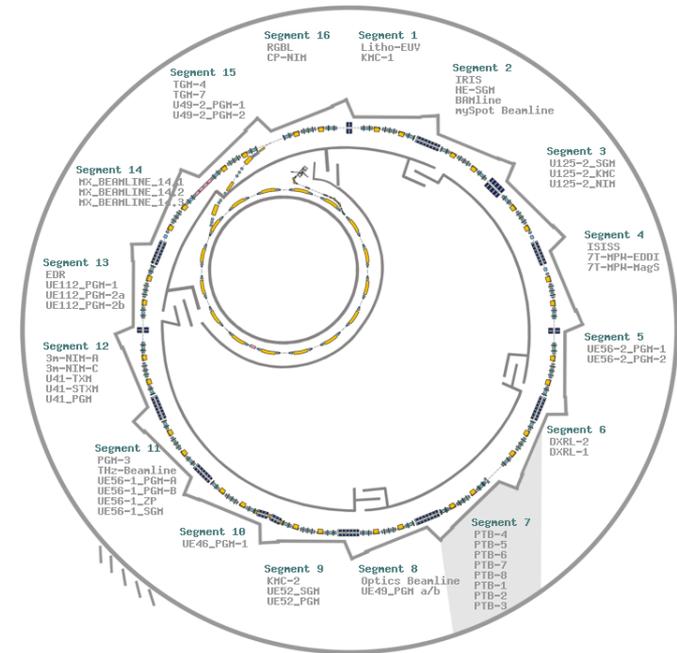


54 beam lines with 41 exp. stations

HZB offers access to neutron and photon instrumentation at the neutron facility BER II and synchrotron source BESSY II



70 % of beam time external
30 % in-house

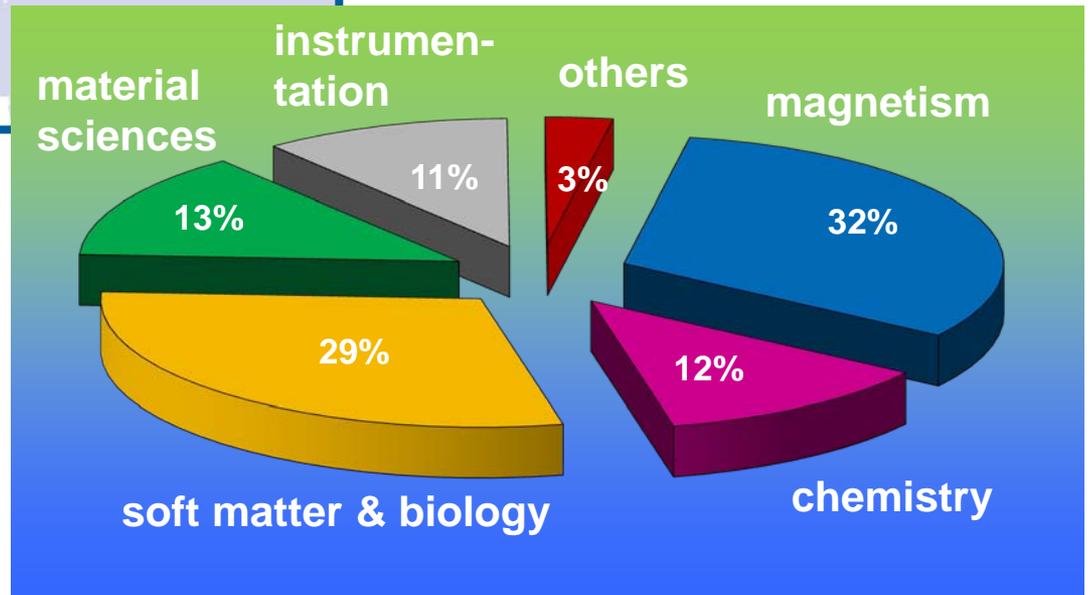


85 % of beam time external
15 % in-house



User access to BER II

- ~ 300 external proposal
- ~ 200 experiments scheduled
- ~ 400 scientific visits
- ~ 60 % European users



Access to neutron instrumentation at BER II

The screenshot displays a web browser window with the following content:

- Browser Title:** HZB-GATE - Mozilla Firefox
- Address Bar:** https://www.helmholtz-berlin.de/pubbin/gate
- Page Header:** HZB Helmholtz Zentrum Berlin
- Navigation Menu:**
 - Overview
 - Research
 - User Coordination
 - Neutrons
 - GATE for neutrons
 - Register
 - Lost password
 - Offers
 - News

Main Content:

- Breadcrumbs:** Mainpage > User Coordination > Neutrons > GATE for neutrons > GATE
- Section:** HZB-GATE for neutrons
- Text:** This is the former BENSVC Visitors Club. Username and password are unchanged.
- Section:** Welcome at the GATE
- Login Form:**
 - Username: (lowercase letters)
 - Password:
 - Login button
- Buttons:** New Users: Register, Lost password

Footer:

- Go to top of page
- responsible: User Office Wannsee
- Favorites, Print Version

General Access Tool G...
applications to submit proposals, experimental reports, publica...
for HZB badges and dosimeters, make reservations in the HZB...
etc.

Access support for users at BER II

EU access to BENSNC - Mozilla Firefox

File Edit View History Bookmarks Tools Help

HZB EU access to BENSNC

helmholtz-berlin.de https://www.helmholtz-berlin.de/user/neutrons/user-info/eu-access-to-bensc_er

Google

HZB Helmholtz Zentrum Berlin

Intranet My Intranet Sitemap Contact Imprint

Advanced Search Search: all sources enter search item, press return

Mainpage > User Coordination > Neutrons > User Info > EU access to BENSNC

Neutrons

EU Funding for Experiments at HZB Neutrons

- Introduction
- General
- Criteria for Eligibility of user groups
- Proposals
- Peer Review by facility independent user group selection panel
- Additional obligations for groups with EU-NMI3 supported projects
- Data protection
- Eligible Countries for Access to HZB Neutrons (BENSNC)

Introduction

HZB Neutrons is member of a network of European neutron facilities – the [Integrated Infrastructure Initiative for Neutron Scattering and Muon Spectroscopy](#) (NMI3).

The NMI3 project is supported by the European Commission through the 7th Framework Programme and it is part of the Research Infrastructures action of the Capacities Programme. (Contract No: 226507).

It brings together 21 partners from 13 countries, including 10 research infrastructures.

http://neutron.neutron-eu.net/n_nmi3fp7



- **new NMI3-II funding Feb. 2012 – Jan 2016**
 - usually support of 1 scientist T&S
- **HZB support of users of German universities**
- **Users have to apply for funding at the User Coordination**

HZB activities at NMI3-II



Coordination activities

- WP 5 Integrated User Access
- WP 6 Data Analysis

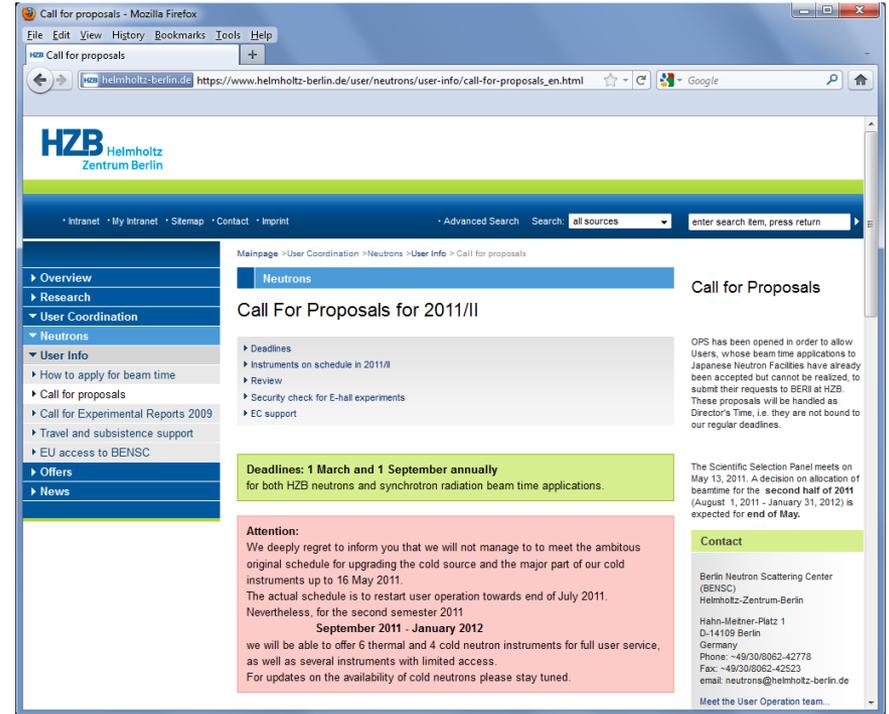
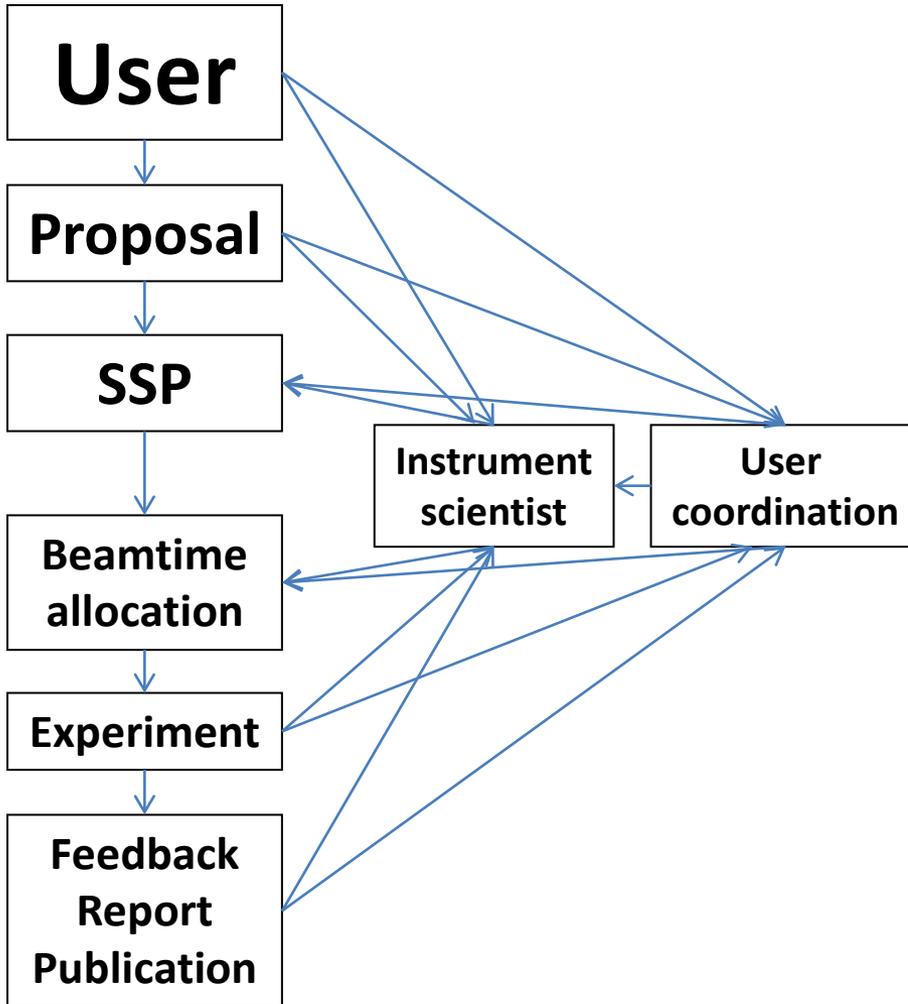
TAA

- WP 12, 300 beam days

RTD/Innovation

- WP 18 Imaging
- WP 20 Advanced Tools
Soft matter &
Biology
- WP 21 Detectors

Proposal – User Workflow



Proposals are evaluated according to scientific merit

HZB Scientific Selection Panel (SSP)

Scientific Colleges:

- C1 Soft Condensed Matter, Biology, Life and Health Sciences
- C2 Macromolecular Crystallography
- C3 Chemistry, Catalysis and Diluted Matter Research
- C4 Electronic Structure (not magnetism)
- C5 Magnetism and Superconductivity
- C6 Material Sciences and Hard Condensed Matter

Scientific Colleges - Mozilla Firefox

File Edit View History Bookmarks Tools Help

HZB Scientific Colleges

helmholtz-berlin.de https://www.helmholtz-berlin.de/user/user-info/colleges/index_en.html

HZB Helmholtz Zentrum Berlin

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Mainpage > User Coordination > General User Info > Scientific Colleges

User Service

Scientific Colleges

To strengthen the synergetic use of neutron and synchrotron radiation, HZB is implementing a common HZB Scientific Panel dealing with proposals for neutron and synchrotron radiation beamtime at BENS and BESS II in joint sessions.

To this purpose, the HZB Scientific Panel is organised in six Scientific Colleges, which are grouped according to research fields in order to facilitate discussions on the scientific merit of the proposals.

All users applying for either neutron or synchrotron radiation beam time are requested to choose the appropriate Scientific College for their proposal upon on-line submission.

C1. Soft Condensed Matter, Biology, Life and Health Science

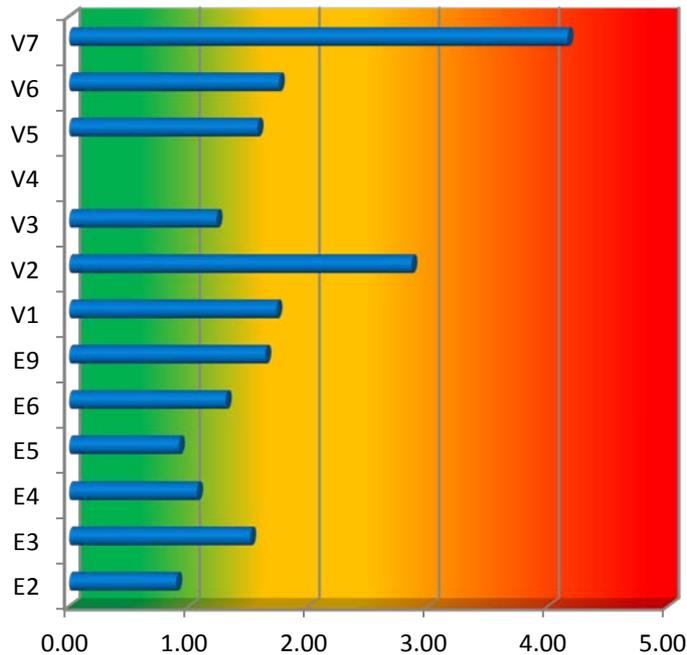
| Research fields/topics | College C1 reviews proposals dealing with |
|---|---|
| <ul style="list-style-type: none">• liquids, solutions• disordered matter, glasses• soft condensed matter• bio-inspired materials• biophysics | liquids, soft matter and bio-inspired materials. Topics include structure, dynamics and kinetics in the bulk and at interfaces. In addition it reviews radiobiology and radiotherapy-related proposals. Projects concerned with biophysical questions or palaeontological |

https://www.helmholtz-berlin.de/user/user-info/colleges/index_en.html

Overbooking at BER II neutron instruments

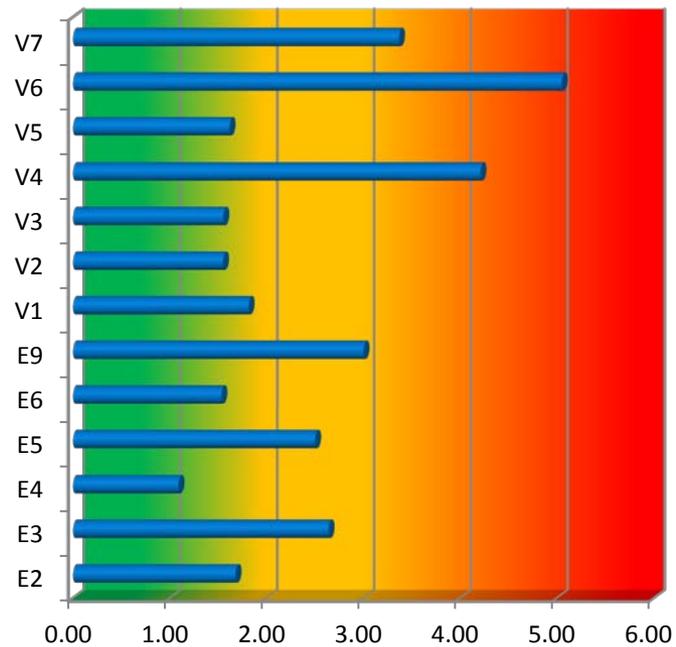
Proposal round 2010-I and 2010-II

Overload 2010/I



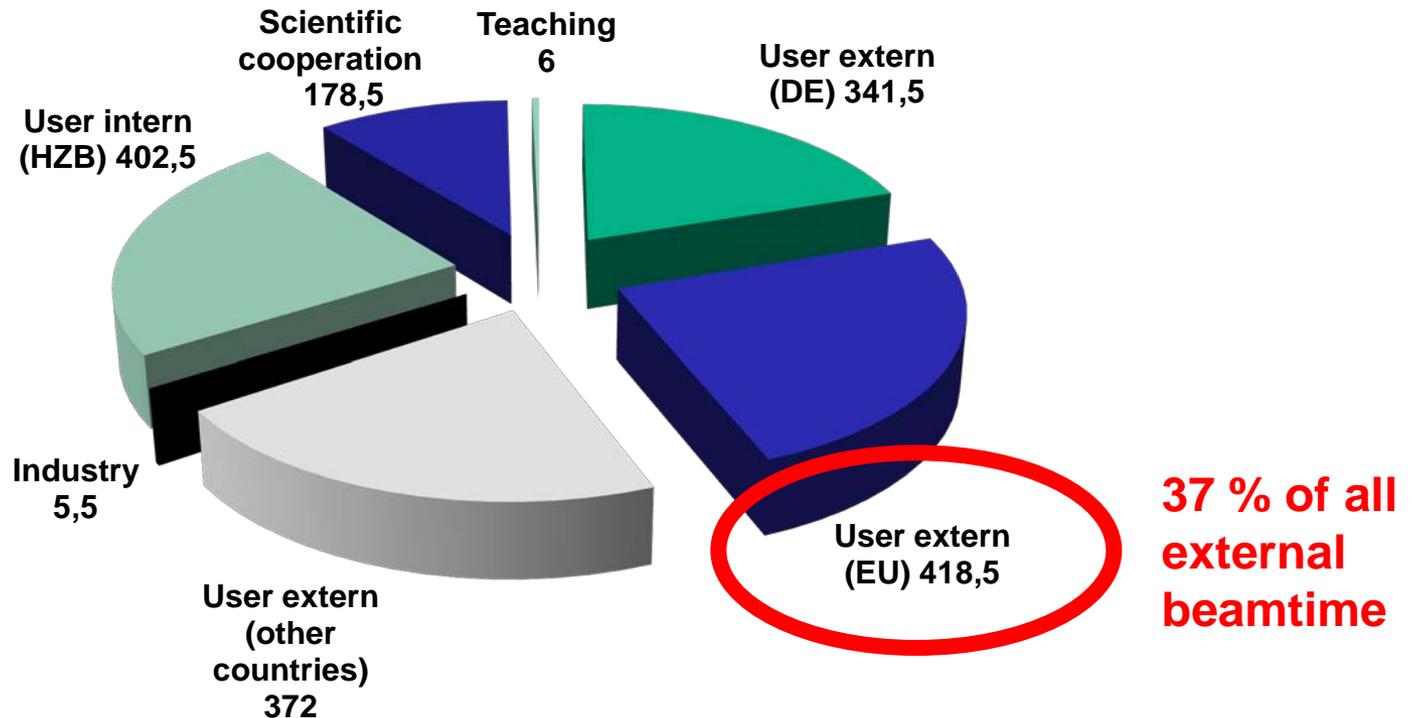
Available beam time: 594 beam days
 Requested beam time: 914 beam days

Overload 2010/II



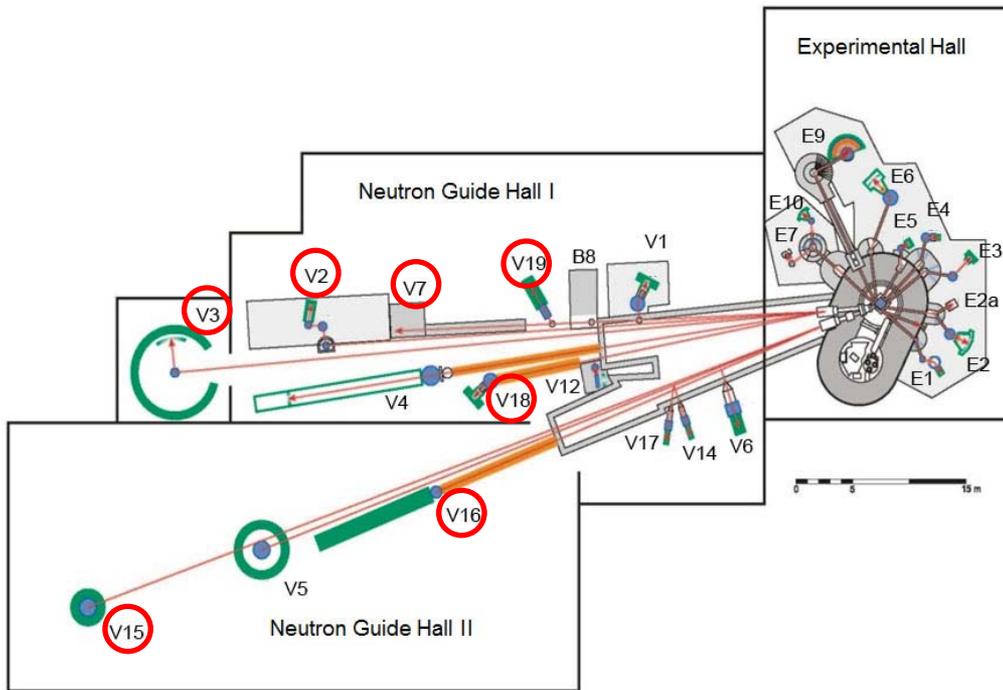
Available beam time: 452 beam days
 Requested beam time: 941 beam days

Beam days neutron instruments at BER II used in 2010 (Jan.-Oct.)



Used beam days in total: 1725 beam days
extern used: 1137.5 beam days (66 %)

Up-grade of beamlines and source at BER II



- up-grade of cold source
- up-grade of neutron guides in neutron guide hall I
- up-grade of FLEX (2012)
- up-grade CONRAD (2011)
- up-grade of NEAT (2013)
- new PONTO II (2013)
- commissioning VSANS
- commissioning BioRef
- EXED

User supporting sample environment and laboratories

The diagram above the screenshot shows the layout of the Experimental Hall and Neutron Guide Hall I. The Experimental Hall is a large rectangular area containing several smaller rooms labeled E4, E5, E6, E9, and E10. The Neutron Guide Hall I is a smaller rectangular area located below the Experimental Hall.

The screenshot shows the HZB Helmholtz Zentrum Berlin website. The page title is "User Lab Cluster". The main content area is divided into two columns: "HZB Wannsee" and "HZB Adlershof".

Experimental Infrastructures

- **User Lab Cluster**
HZB is hosting a number of state-of-the-art **on-site laboratories** and user facilities. All those research facilities are designed to serve researchers from universities, foreign research institutions and industry.
Prerequisite for the use of the User Lab Cluster is an application for beamtime for either the neutron source (BER II) or synchrotron radiation source (BESSY II).

HZB Wannsee

- **BioLab Wannsee**
 - Chemistry Lab
 - Colloid Lab
 - Theory Support Lab
- **DEGAS - GasLab**
- **LAMMB - MagLab**

HZB Adlershof

- **BioLab - MX**
- **X-ray Support Lab**
- **Sputter Lab**

Further laboratories
Also available are:

- **X-ray Lab - XLab**
 - Joint Laboratory of Structural Research (CryoTEM)
 - Tomography Lab (micro-CT)

Sample environment

at instruments

(cryostats, furnaces, magnets, pressure cells, gas atmospheres)

Laboratory facilities

- BioLab
- Chemistry Lab
- Colloid Lab
- MagLab
- X-ray Support Lab
- Applied Materials Lab
- Sputter Lab
- Theory Support Lab

Radiation facilities

- NAA

Theory Support Lab (J. Dzubiella, F-I2)

➤ Basic service:

Support for numerical analysis, fitting, and possible theoretical interpretation of (neutron and X-ray) scattering data

➤ Software / numerical methods

SANS: *egraph* (Data recording / export)

→ *Mantid* (Data gathering / reduction)

→ *SANSfit* (Fitting by form and structure factors)

→ support for inclusion of nonstandard form and structure factors

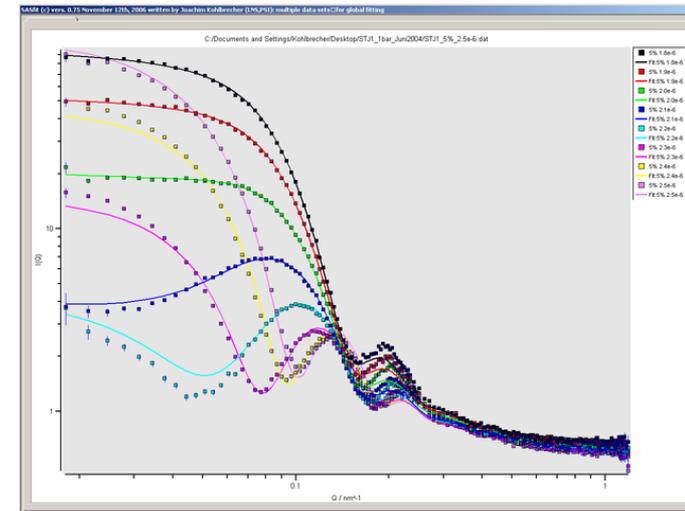
ASAXS:?

➤ Advanced methods / statistical physics

(*long term proposals / collaboration*)

integral equation theory (IET), density functional theory (DFT),

computer simulations: Monte-Carlo (MC), molecular dynamics (MD)

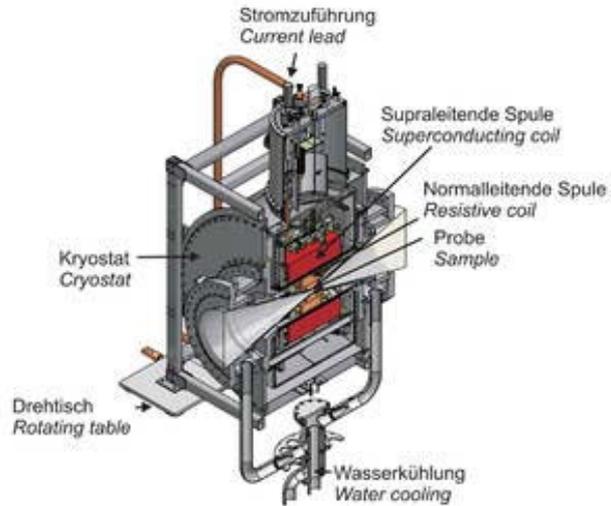


MagLab (**L**aboratory for **M**agnetic **M**easurements at the **H**elmholtz-Zentrum **B**erlin **L**a**M**M**B**) (K. Kiefer NP-H21)

- cooperation of M-I1 and NP-H12
- central access to low temperature and high magnetic fields
- presently 5 cryomagnets operational up to 17T and down to 50 mK
- ≥ 100 experiments per year
- combination of standard and highly specialized equipment
- magnetization, heat capacity, electric resistivity, dielectric properties



High Magnetic Field Project



High Field Magnet for neutron scattering reaching 25-31 T

- total investment costs ~20 million €
- construction time of ~5 years
- start 2007



GATE - the common HZB user access portal

The image displays three overlapping screenshots of the GATE web portal, illustrating the user access process:

- Top-left screenshot:** Shows the login page with the HZB logo and navigation menu (Login, Recover password, Registration). The login form includes fields for Username (filled with 'tester') and Password (filled with '*****'), and a 'go' button. A note indicates that an asterisk denotes required fields.
- Top-middle screenshot:** Shows the user profile page ('User/Basic/profile'). The navigation menu includes Logout, System Administrator, User Office, User menu, Your account, and Proposer. The 'Personal data' section contains various fields such as Gender, Title, Firstname, Lastname, Initials, Name at birth, Birthdate, Your nationality, Email address, Profession, Academic degree, Your organisation, Department, Street, Zip code, City, and Country.
- Top-right screenshot:** Shows the proposal submission page ('Proposer/Proposals/newProposal'). The navigation menu includes Logout, System Administrator, User Office, User menu, Proposer, and Proposals. The 'General part' section contains fields for Main proposer (filled with 'Thomas Guberlet'), Title, Abstract, and Funding (a dropdown menu). A 'save' button is visible. A legend on the right lists the proposal parts: 1. General part, 2. Scientific part, 3. Technical part, 4. Link prev. results, 5. Submit proposal. A note indicates that an asterisk denotes required fields.

Neutrons meet User

HZB User Coordination Neutrons

www.helmholtz-berlin.de/user

Thank you

