

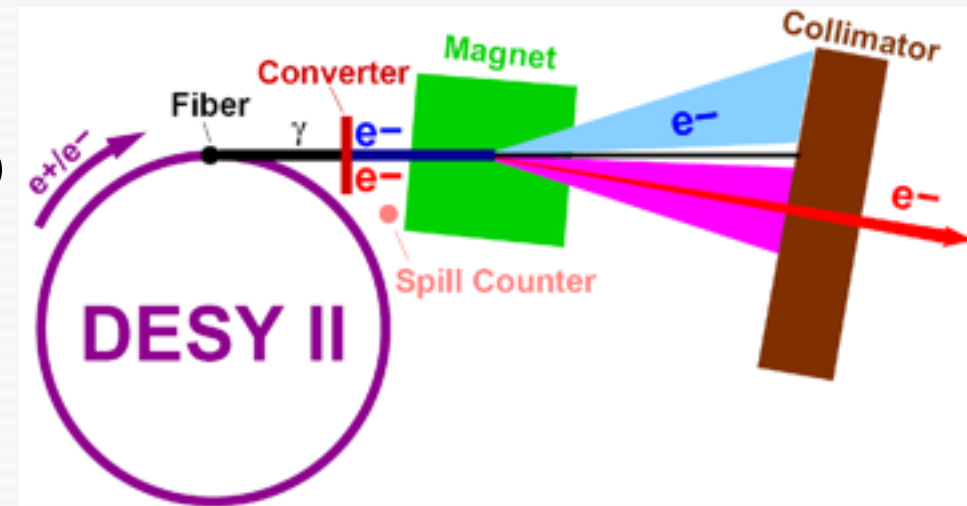
DESY-II Testbeam Facility



Marcel Stanitzki

The DESY Testbeam Facility

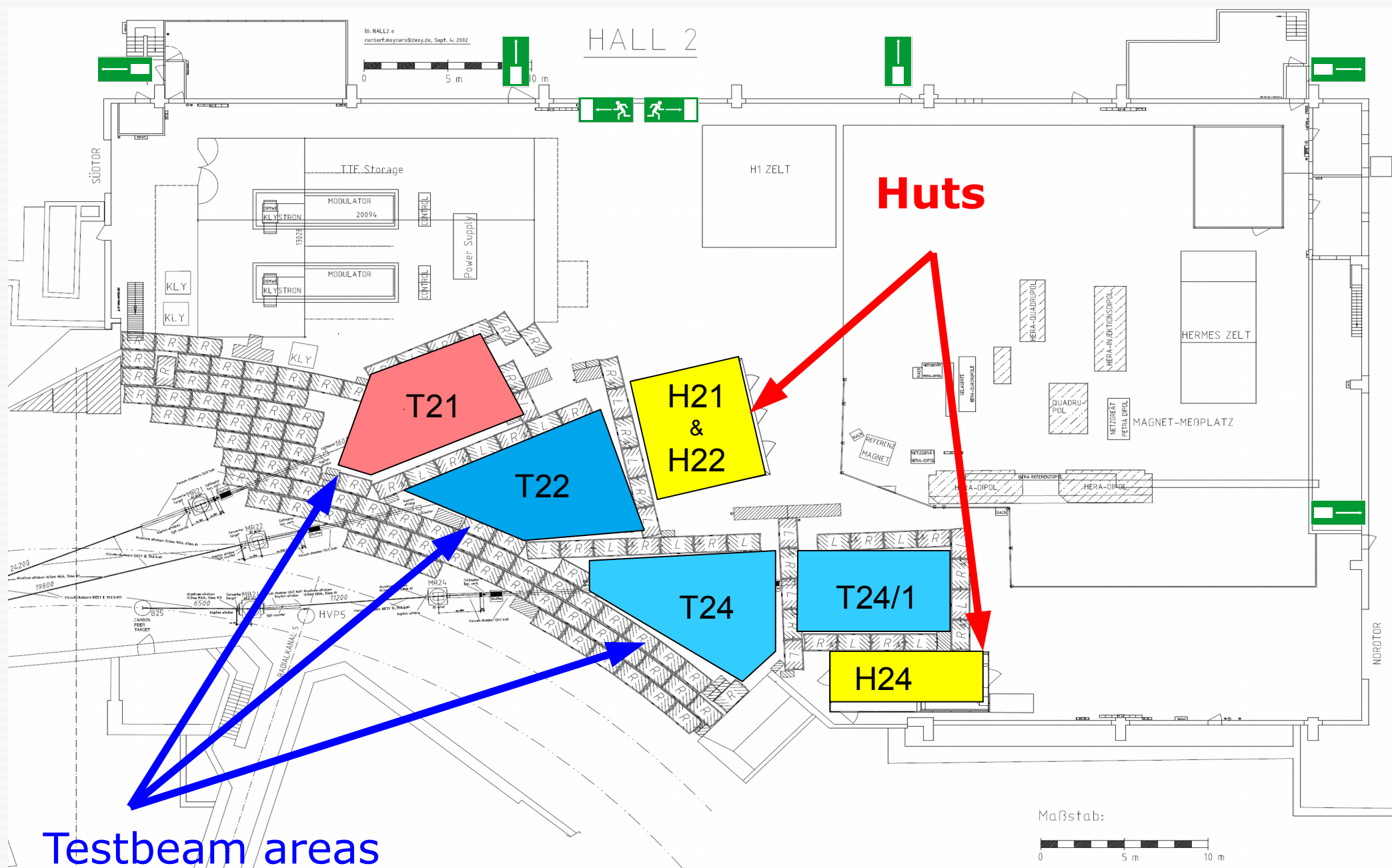
- Facility fed by DESY-II synchrotron
- Bremsstrahlungs / conversion beam with E_e up to 6 GeV
- Beam momentum steered by magnet current by test beam user.
- Rates depending on beam line, energy, target material, collimator setting and operation.



The Beamlines

- The facility offers
 - Three individual beam lines
- All Users can
 - Shutter control
 - Handle Area interlocking
 - Select particle momentum
 - Adjust Particle Rates
 - Collimation (two sets of collimators)
- Independent for all three beam lines

Testbeam Hall (Halle 2 Geb. 27)



Testbeam areas

Maßstab:
0 5 m 10 m



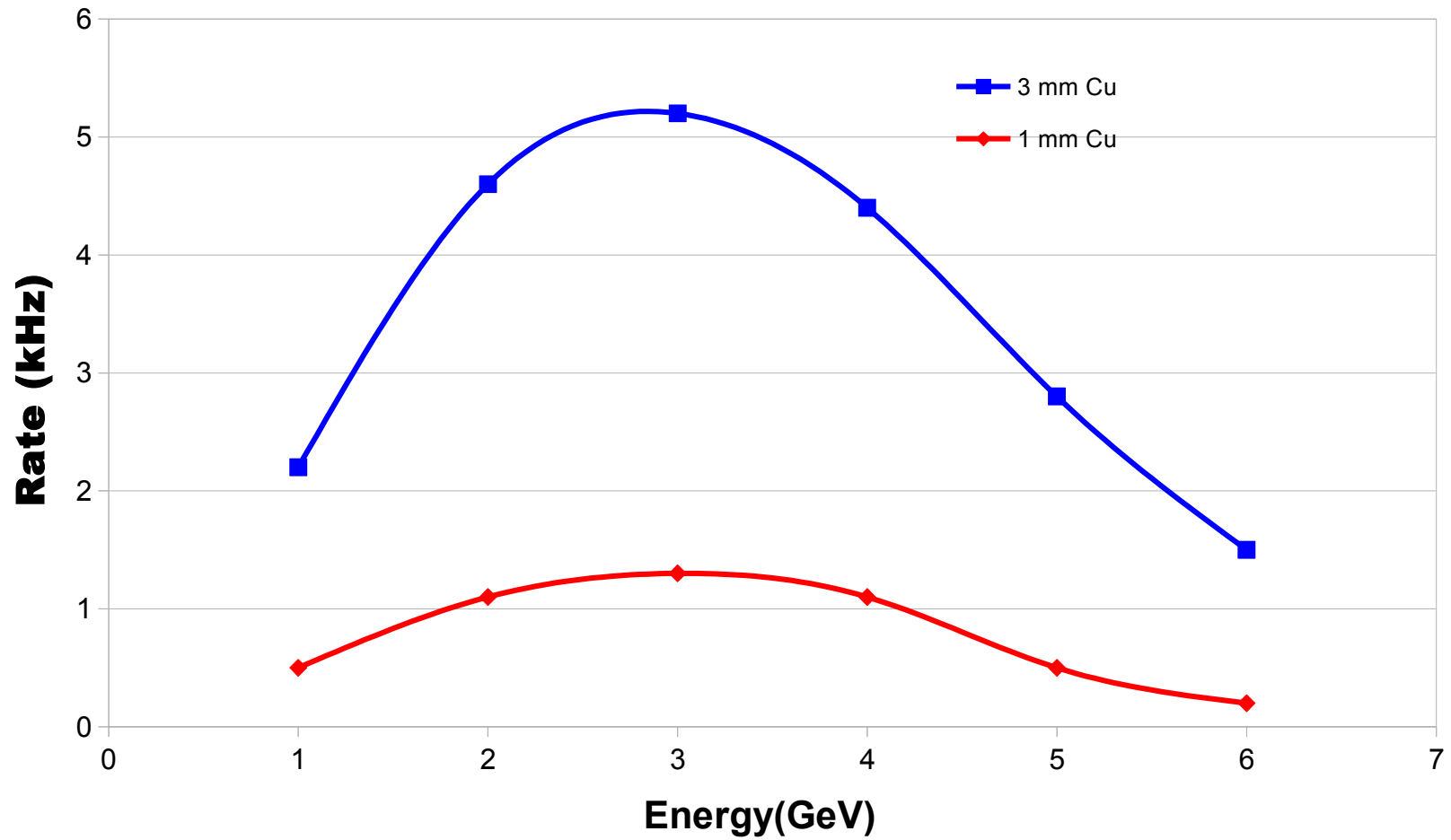
Beam availability

- DESY-II synchrotron
 - ~ 99 % uptime during scheduled runs
 - Main purpose: Injector for Petra
- Beam structure
 - 1 MHz clock
 - Basic magnet cycle 12.5 Hz (accelerating from 450 MeV to 6.3 GeV)
 - 1 bunch per fill (30 ps)
- Interruption during Extraction for Petra (sec-min)
 - Otherwise almost DC beam (no spill structure)



Rates

DESY Testbeam rates



Infrastructure

- All the usual things ...
- 30 kg and 1 ton stages in every area
 - To mount user setup on
- 20 t crane at the roof to move larger setups in and out
- Patch panels for Ethernet, Lemo, HV
- Dry Nitrogen
- Full-fledged Gas Setup
 - Also flammable gas is possible

Unique at DESY

- TB21 & 22 have each a 6 layer pixel telescope
 - Complete Package (Hardware, Trigger, Reconstruction software)
 - Supports trigger rates up to 3 kHz
 - Few micron tracking resolution
- Dipole Magnet in TB 21
 - For tracking studies
- 1T Solenoid for putting detectors in a magnetic fields
 - Internal diameter 85 cm
 - moveable

The Pixel Beam Telescopes

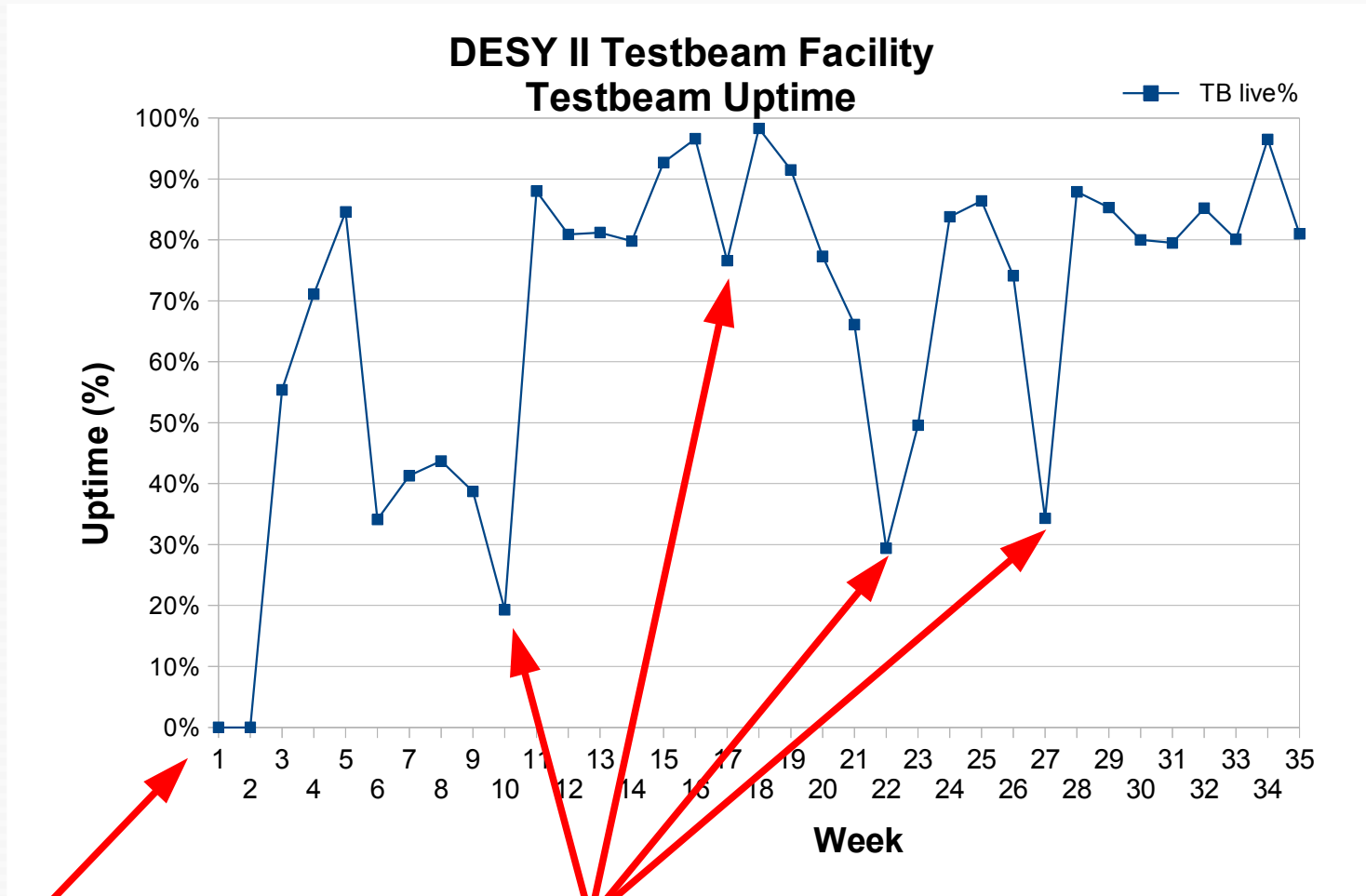


- Using MAPS pixel planes
 - 1 cm x 2 cm size
 - 18 μm pixel pitch
- Dedicated stages to move/rotate Devices-under-test (DUT)
- Both Arms adjustable
 - To accommodate different DUTs.
- Dedicated Support crew

Solenoid



2013 Usage



Ramp-Up

MD Weeks



2013 Summary

- Up to September, 1st
- 247 Users in total
- Users from:
 - Germany
24.7 %
 - European
50.2 %
 - Extra-European
25.1 %
- Users from
 - LHC ~ 50 %
 - ILC/CLIC 30 %
 - Others (Belle, FAIR)
20 %
- And some more...
 - ITER (magnetic field tests)
 - XFEL

How to apply for beamtime

- Send an email to
 - `testbeam-coor@desy.de`
- Testbeam coordinators will try to accommodate everybody
- There is an annual call for testbeam time
 - Subscribe to
`https://lists.desy.de/sympa/subscribe/testbeam-info`
- Lots of information at
 - `http://testbeams.desy.de`
 - Latest Schedule
 - Updates, Instructions

Summary

- DESY-II Testbeam facility offers
 - 3 beamlines with 1-6 GeV electrons
 - Fully adjustable by the users
- Unique Infrastructures
 - Testbeam telescopes
 - Solenoid and Dipole magnets
- Open to the entire community
 - Call for request for 2014 soon

