



Status of GSI

Karlheinz Langanke

GSI Helmholtzzentrum für Schwerionenforschung

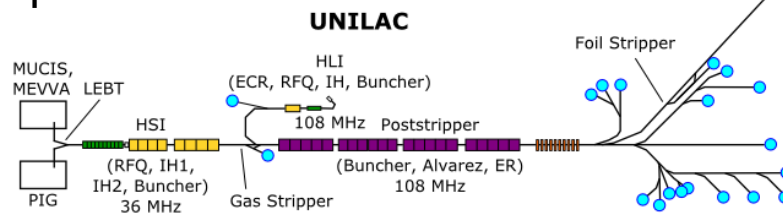
Darmstadt

Germany

GSI Accelerators

UNILAC

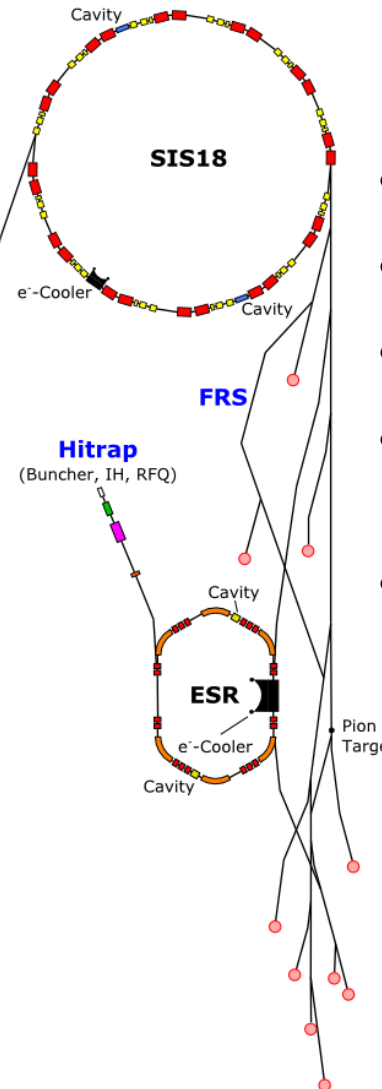
- 3 ion sources
- 4 branches/16 experimental caves
- 50 Hz repetition rate



Main Progress

- high intensity ^{50}Ti for SHE experiments
- 3×10^9 U @ 1 AGeV in SIS

0 25 m
A. Bloch-Sp  th, 2011



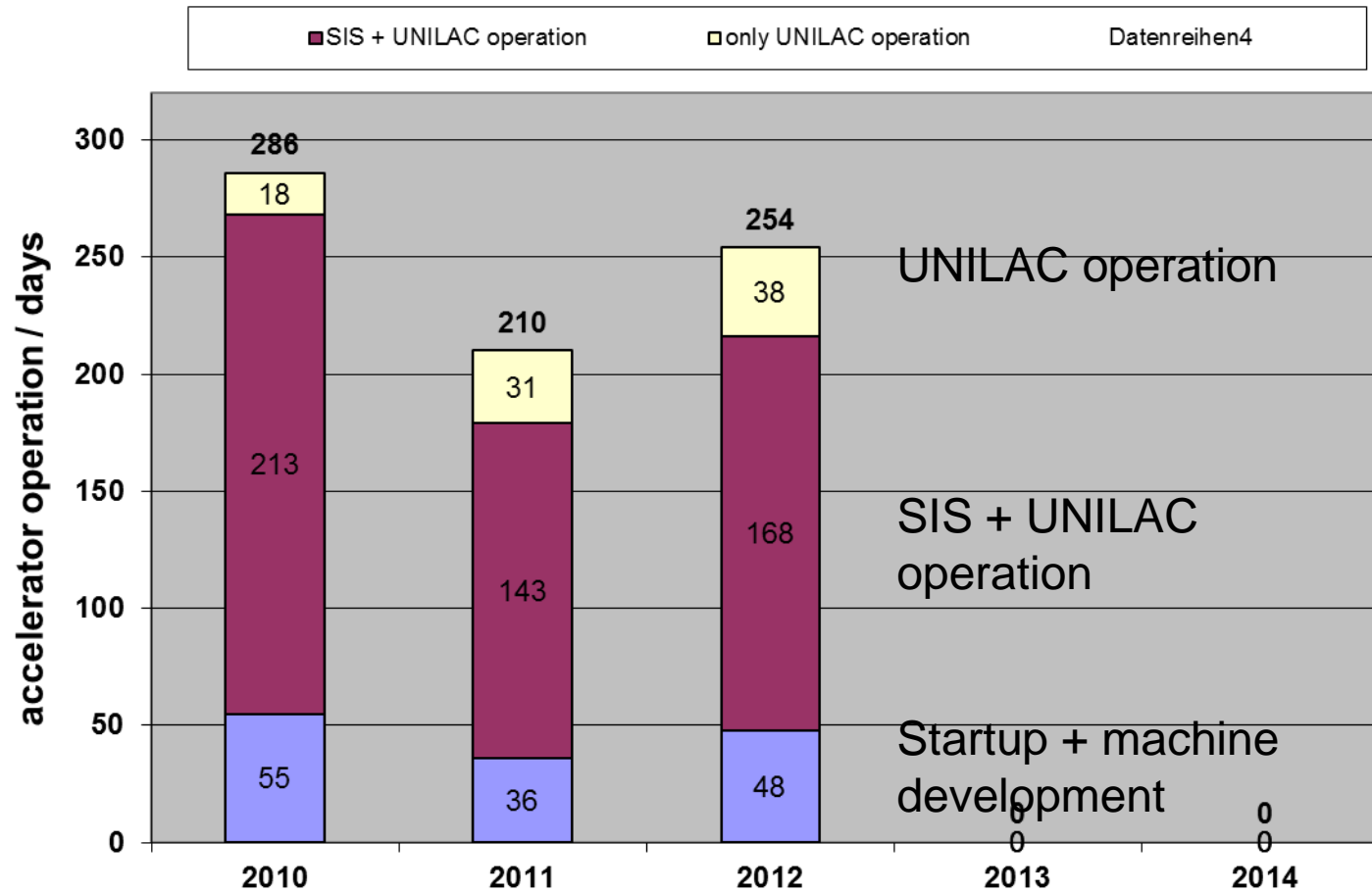
SIS18

- max. rigidity 18Tm
- slow extraction
- fast extraction
- beam pulse 1 μs -10 sec.
- 10 experimental caves

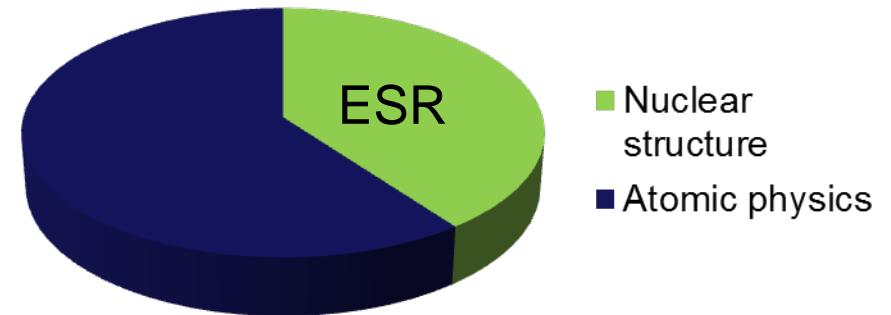
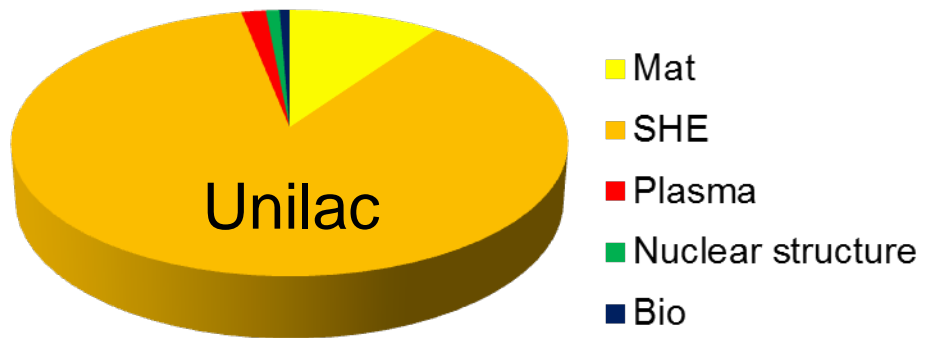
ESR

- beam pulse from a few seconds up to 30 minutes

Accelerator operation 2010-2012

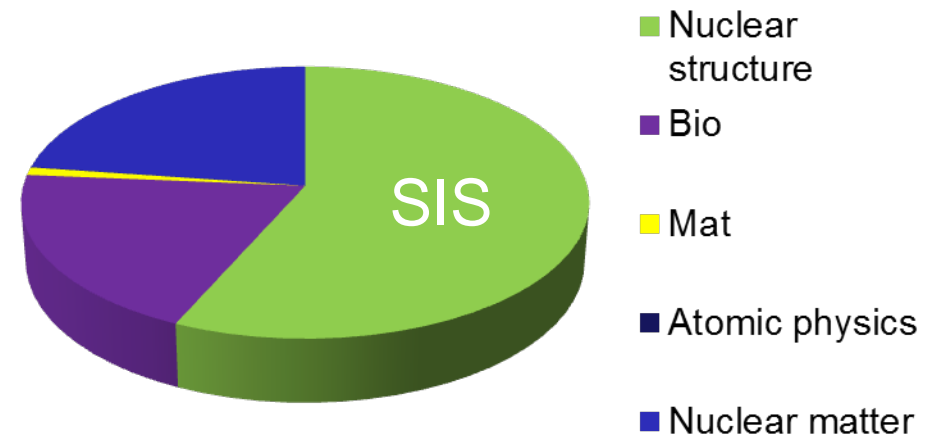


Beam Time Distribution 2012



Total beam time 2012 (hours)

Unilac	4180
ESR	1810
SIS	2570



FAIR

FAIR facility:

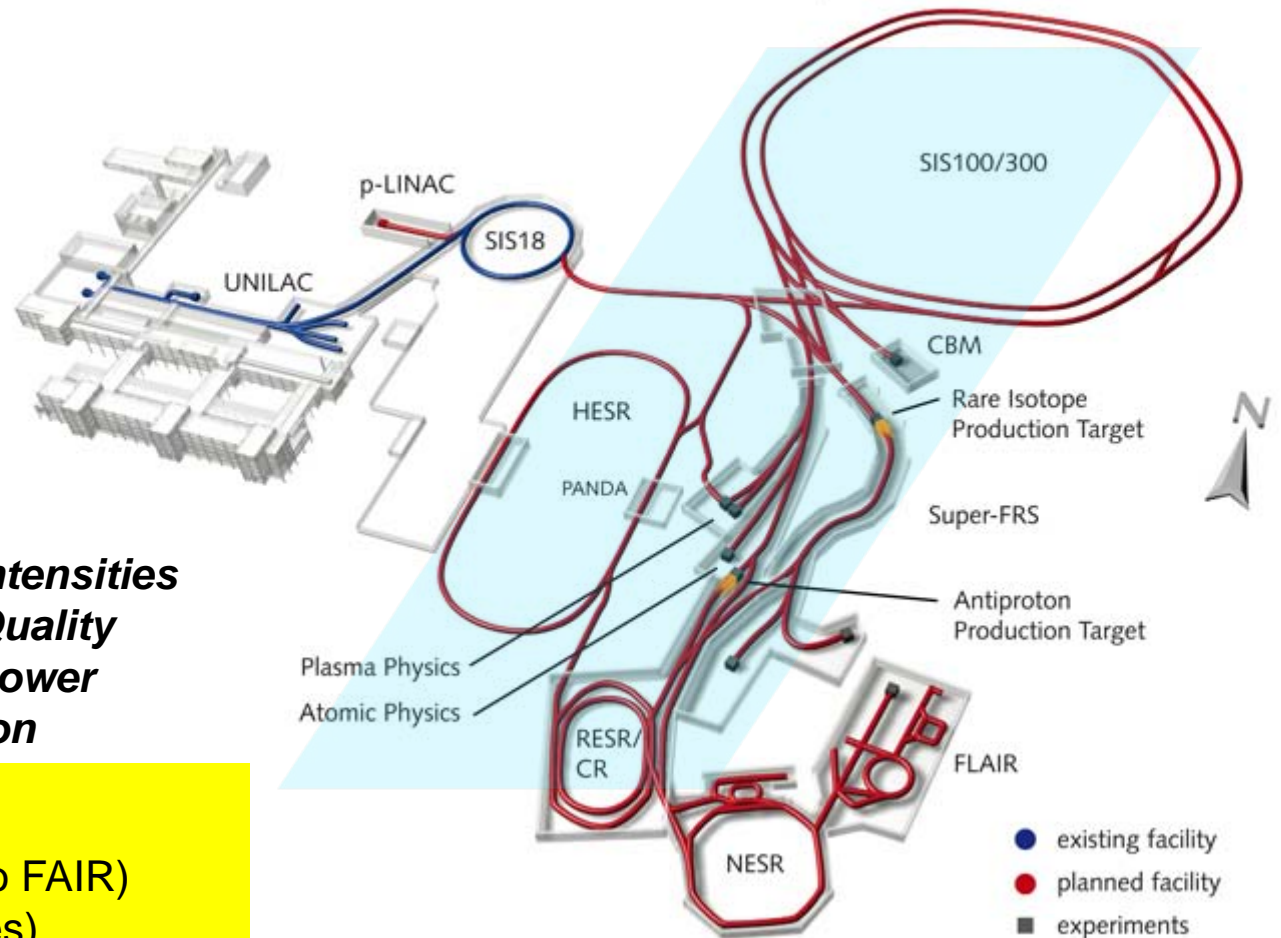
center for antiproton and
ion research:

- p-linac
- 100Tm synchrotron**
- Super FRS**
- Anti proton target
- Collector ring
- High energy storage ring

***Highest Beam Intensities
Brilliant Beam Quality
Highest Beam Power
Parallel Operation***

GSI upgrade:

- link existing facility (connection to FAIR)
- high energy linac (FAIR intensities)
- cw demonstrator/linac (R&D, UNILAC Hall)

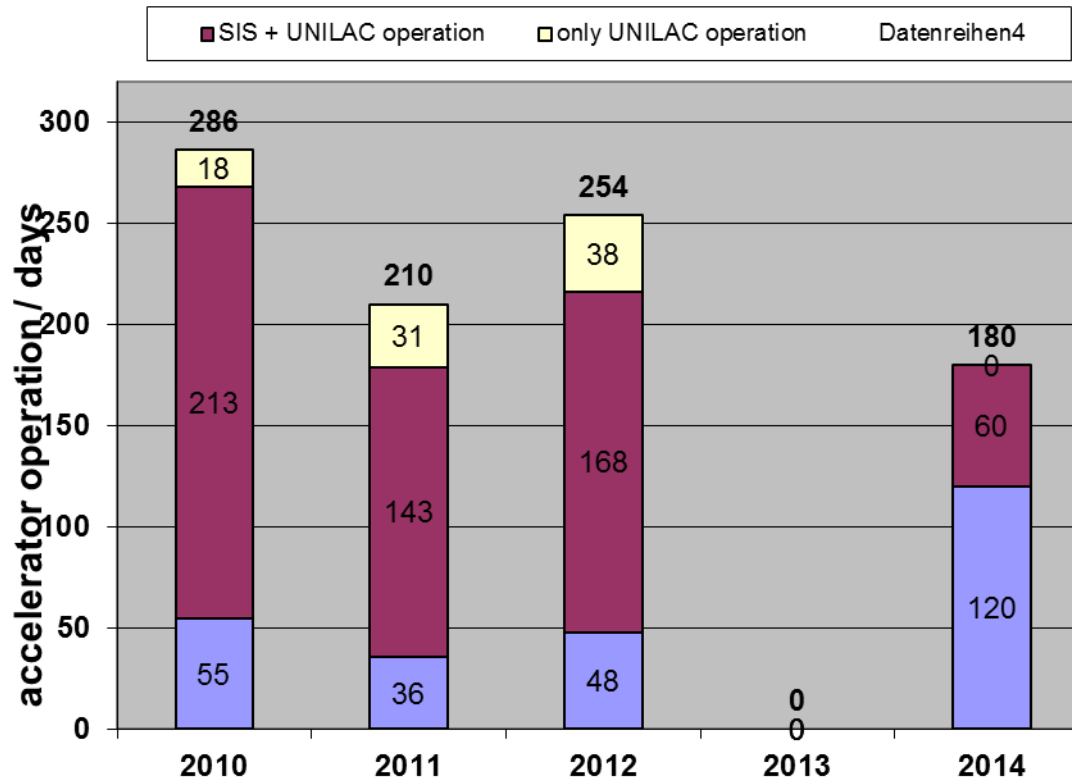


FAIR construction side



- ✓ Side preparation ongoing
- ✓ Drilling of 1500 holes for concrete pillars to stabilize the ground

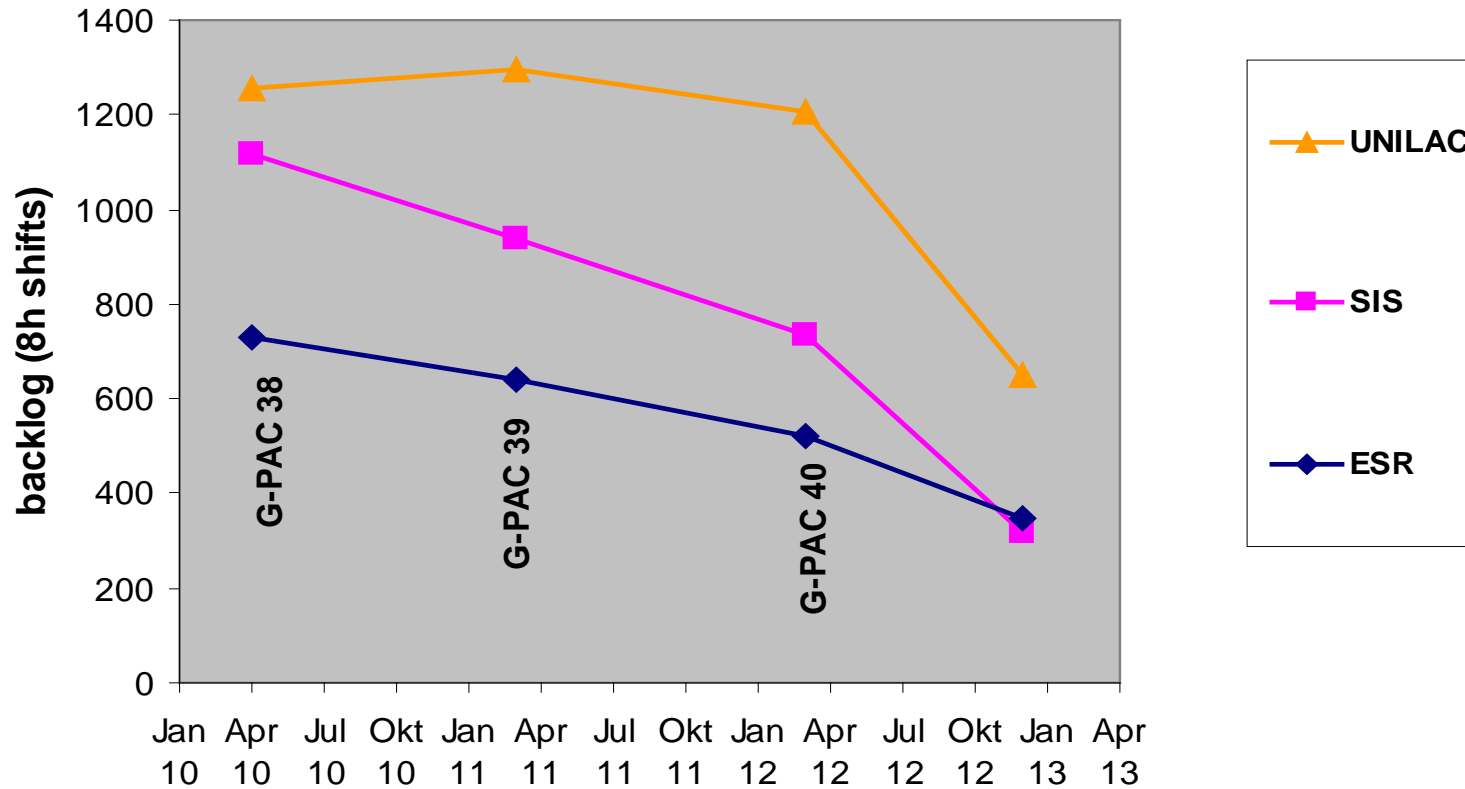
Beam time planning



Experiments

FAIR accelerator
development and
detector tests

Backlog end 2012



Substantial backlog →
no further calls for proposals
PACs suspended

Process of Prioritizing Experiments in Beam times 2013-14

New proposals by external users should be channeled through the FAIR collaborations, the GSI representatives of the research fields or the FAIR Project leaders at GSI

Proposals should include a short project description, required resources, the relevance to FAIR and a detailed justification for the needed beam time

An internal pre-sorting of backlog and new proposals will be done by GSI representatives of the research fields

The head of the G-PAC, the chairs of WBR (Wissenschaftlicher Beirat) of GSI and BFC (Board of FAIR collaborations) and the internal research field representatives make recommendations on beam time distribution to the GSI management

Process ongoing

Outlook

Beam time GSI 2014: Total six months, approx. two months devoted for research experiments (not including FAIR relevant detector tests), starting February, lasting until September (shutdown in June)

ENSAR relevant experiments: AGATA, R3B, applications (material science), heavy elements (TASCA, SHIP), FRS

and pion and proton induced reactions with HADES and FRS, atomic physics