

A short history of PITZ1

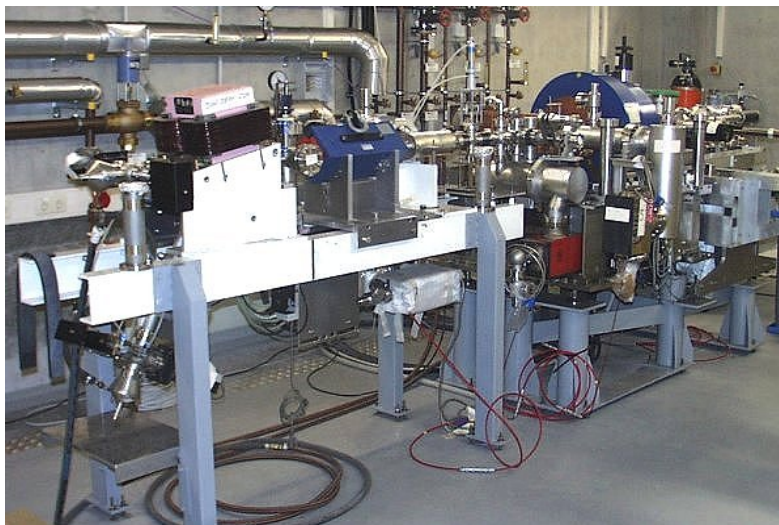
Summer 2000 – Building the infrastructure

- tunnel and klystron hall
- control room, laser hutch, rack room
- power station and cooling system



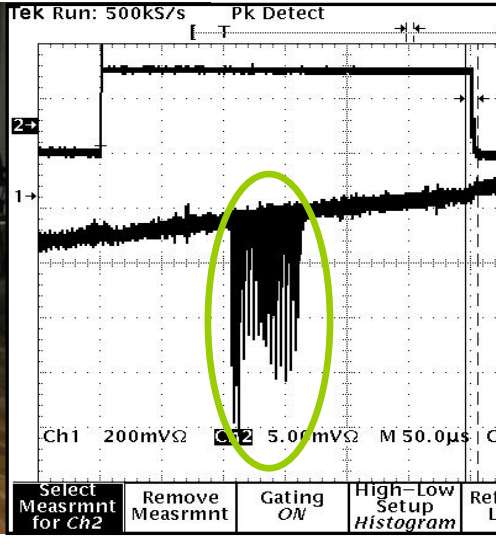
A short history of PITZ1

December 2001: First installation and injector commissioning



A short history of PITZ1

January 2002: First photo electrons produced



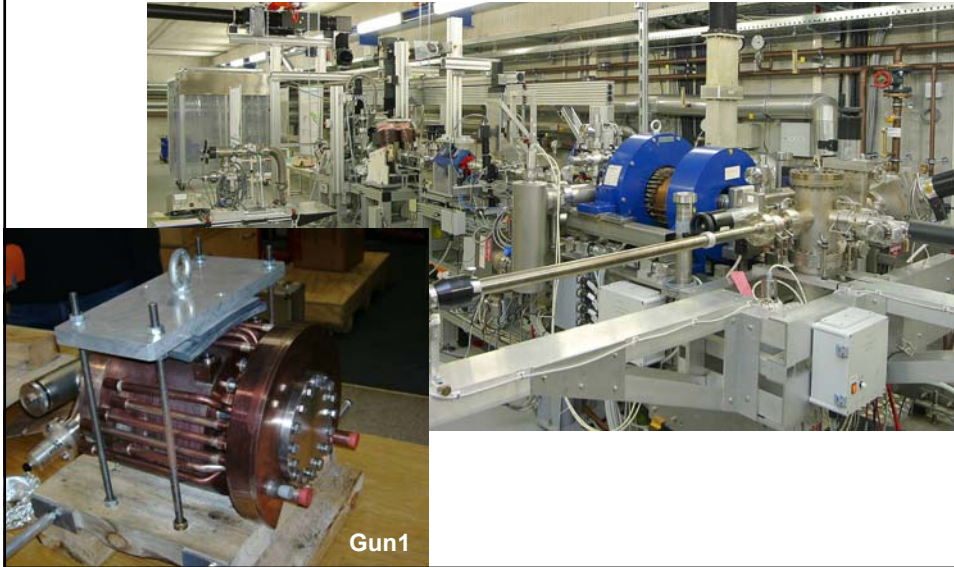
A short history of PITZ1

November 2003: Gun2 is installed at the FLASH facility



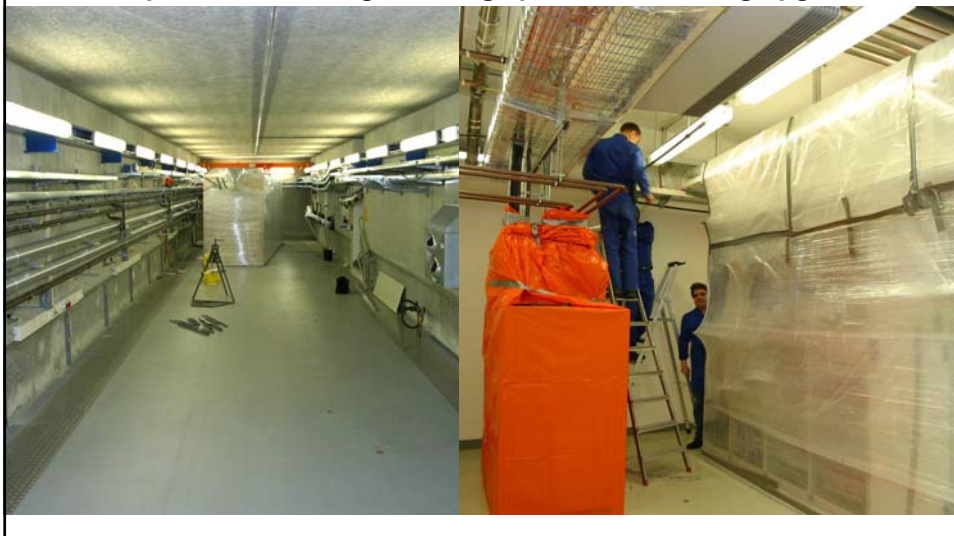
A short history of PITZ1

2004: PITZ continues with another gun



A short history of PITZ1

November 2004: End of PITZ1
Complete dismounting for a large power and cooling upgrade



The PITZ facility upgrade

Spring 2005: Installation of PITZ1.5
with the booster cavity and the SPARC emittance meter



The PITZ facility upgrade

Summer 2005:
• first measurements at increased beam energy (5 MeV → 13 MeV)
using the TESLA booster cavity
• first high power tests of Gun1
with 10 MW klystron



The PITZ facility upgrade

2006: PITZ prepares a spare gun for FLASH



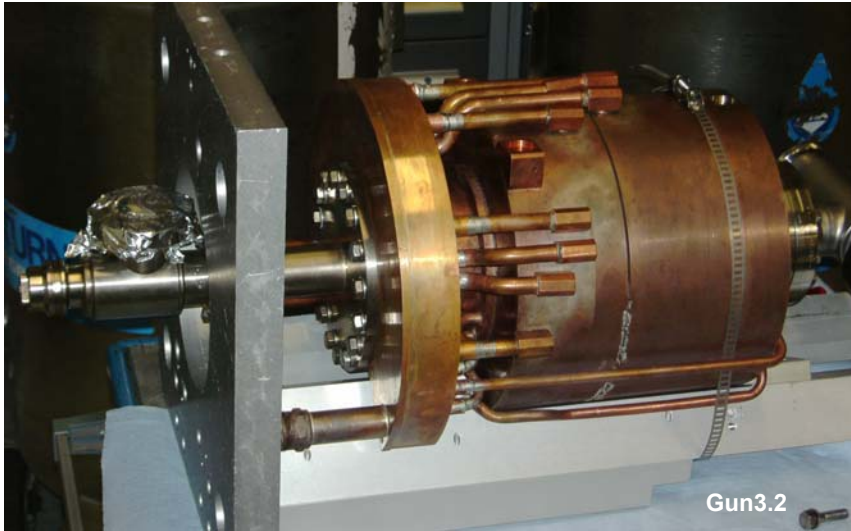
The PITZ facility upgrade

Summer 2006: Installation of PITZ1.6
with three new emittance measurement systems

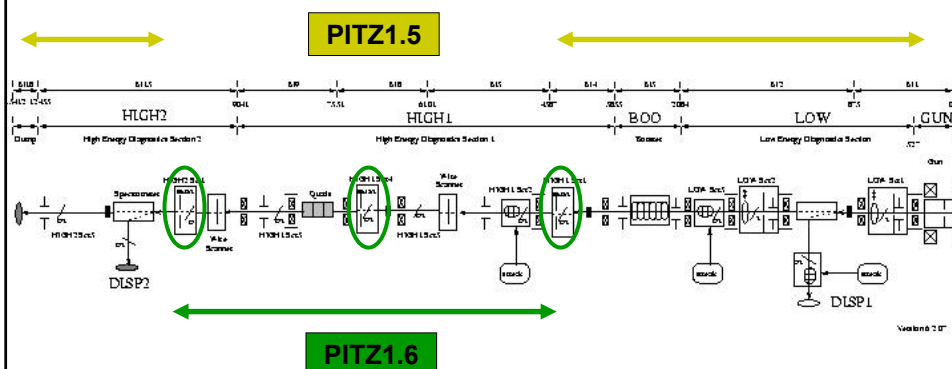


The PITZ facility upgrade

February 2007: The new PITZ gun is installed



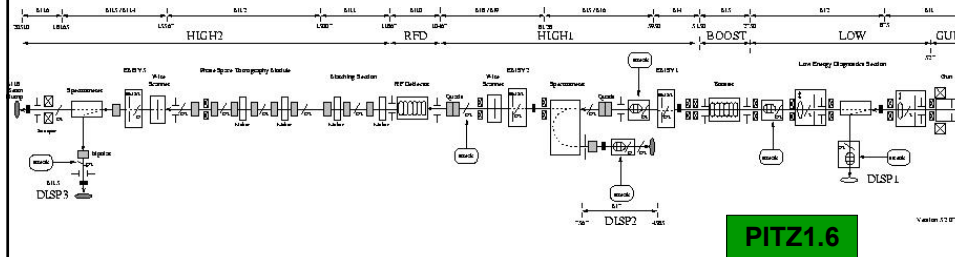
Current status: PITZ1.6



- three new emittance measurement systems
- re-arrangement of existing diagnostics

Current status: PITZ1.6

Schematics of PITZ2:



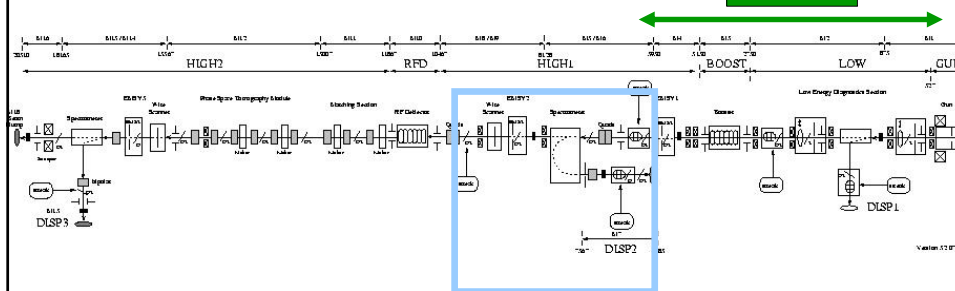
HEDA2 / beam dump:
→ to be replaced;
physical design started

will be re-arranged

final installation

Towards PITZ2

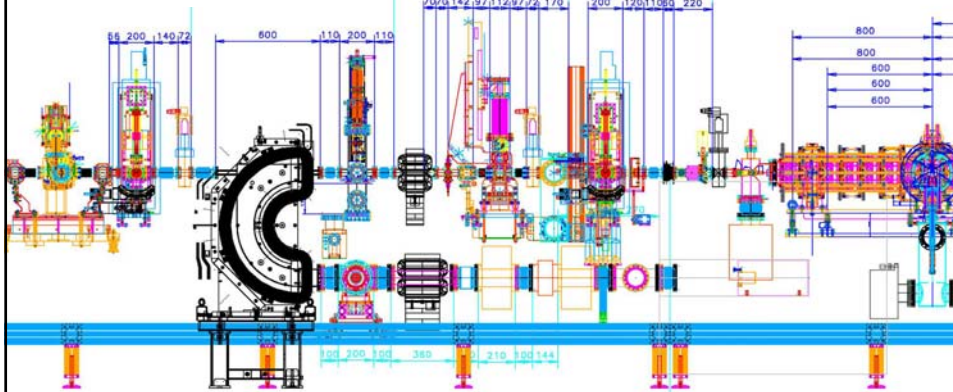
Schematics of PITZ2:



HEDA1:
to be installed in Autumn 2007;
design ready, construction started

Towards PITZ2

HEDA1 - Final layout

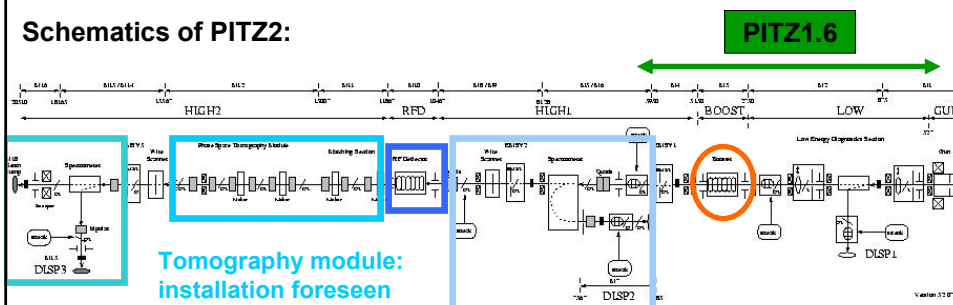


very complex beamline →
interplay of components important

Courtesy J.Meissner

Towards PITZ2

Schematics of PITZ2:



Tomography module:
installation foreseen
in Winter 2007;
design considerations
ongoing

HEDA1:
to be installed in Autumn 2007;
design ready, construction started

HEDA2 / beam dump:
physical design started

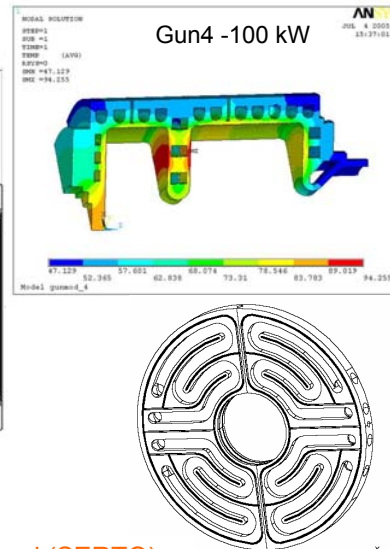
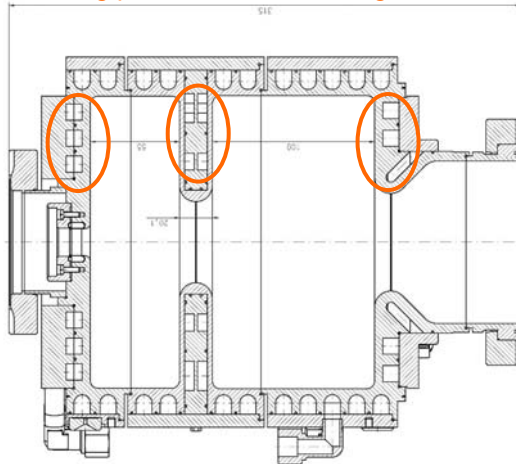
RF deflector:
technical design to be done

+ finally: replace TESLA booster and install new CDS booster (2008)

In addition: 2 new guns (4.1 and 4.2) are under production in Hamburg !

Gun4 – a new gun for PITZ

to be used with higher RF peak power
and long pulses → more cooling needed



→ new cooling water distribution system required (SERTO)

Courtesy J.Meissner

Outlook: PITZ planning 2007

- Feb 2007: start conditioning of **Gun3.2** up to 60 MV/m
- Summer 2007: **physics studies** for XFEL with PITZ1.6, **new laser system** to be installed
- Spring / Summer 2007: **Gun4.1** and **Gun4.2** ready
→ conditioning at CTS when possible
- Autumn/ Winter 2007: **beamline upgrade** with HEDA1 (**PITZ1.7** ?) and PST module later on
- Spring 2008: **CDS booster** installation

In parallel:

- continuous commissioning of new diagnostics components
- test of 10 MW klystrons
- ...

Finally...

