

THE ARES LINAC at DESY

Status update

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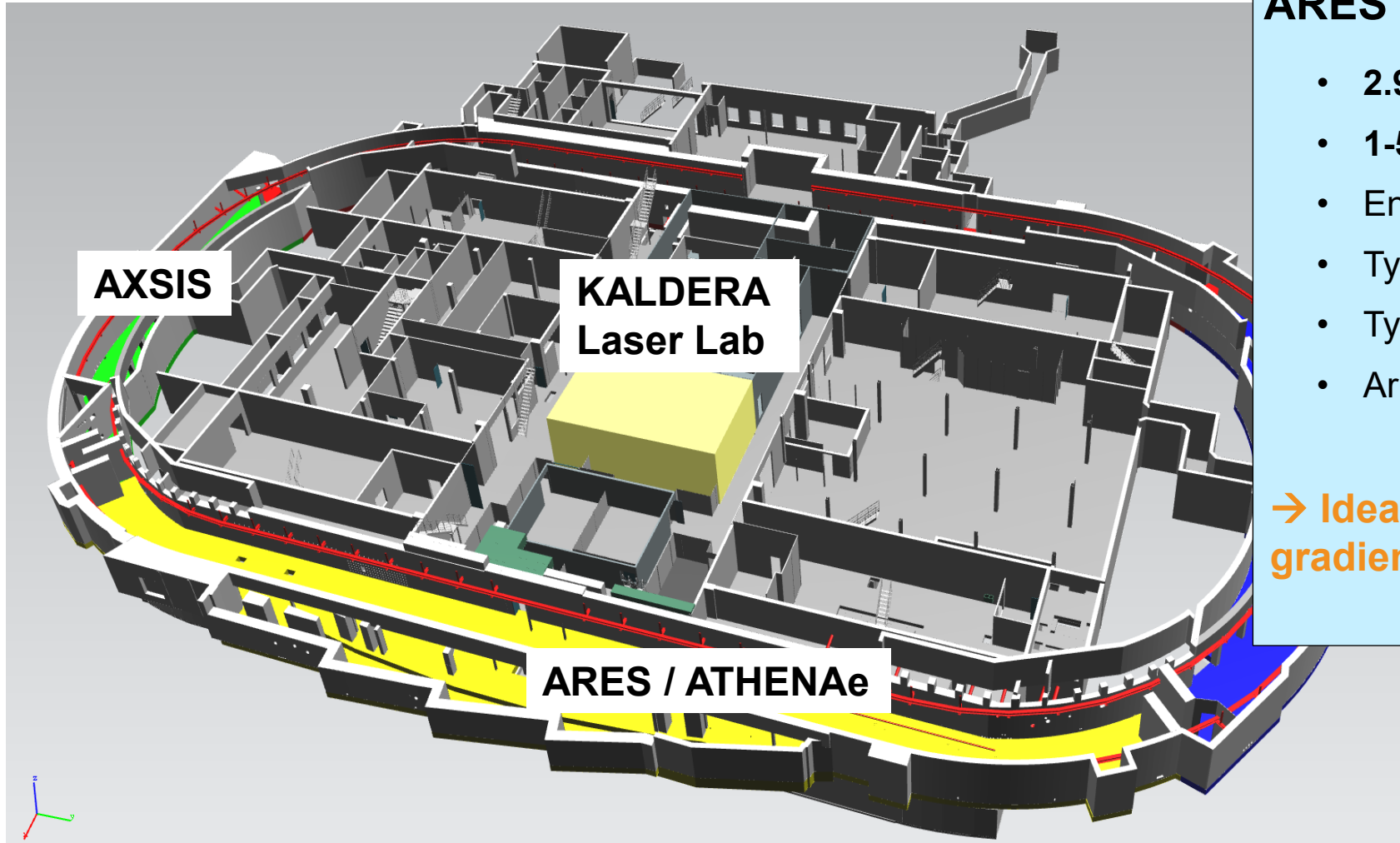
MT ARD ST3 annual meeting @ GSI, 17th of October 2019

HELMHOLTZ RESEARCH FOR
GRAND CHALLENGES



ARES Linac at the SINBAD Facility at DESY

Accelerator R&D



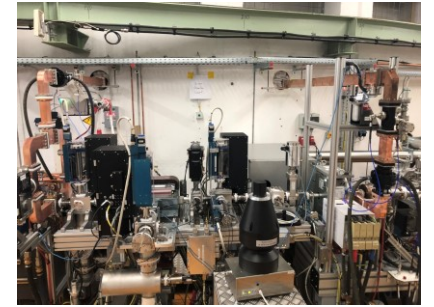
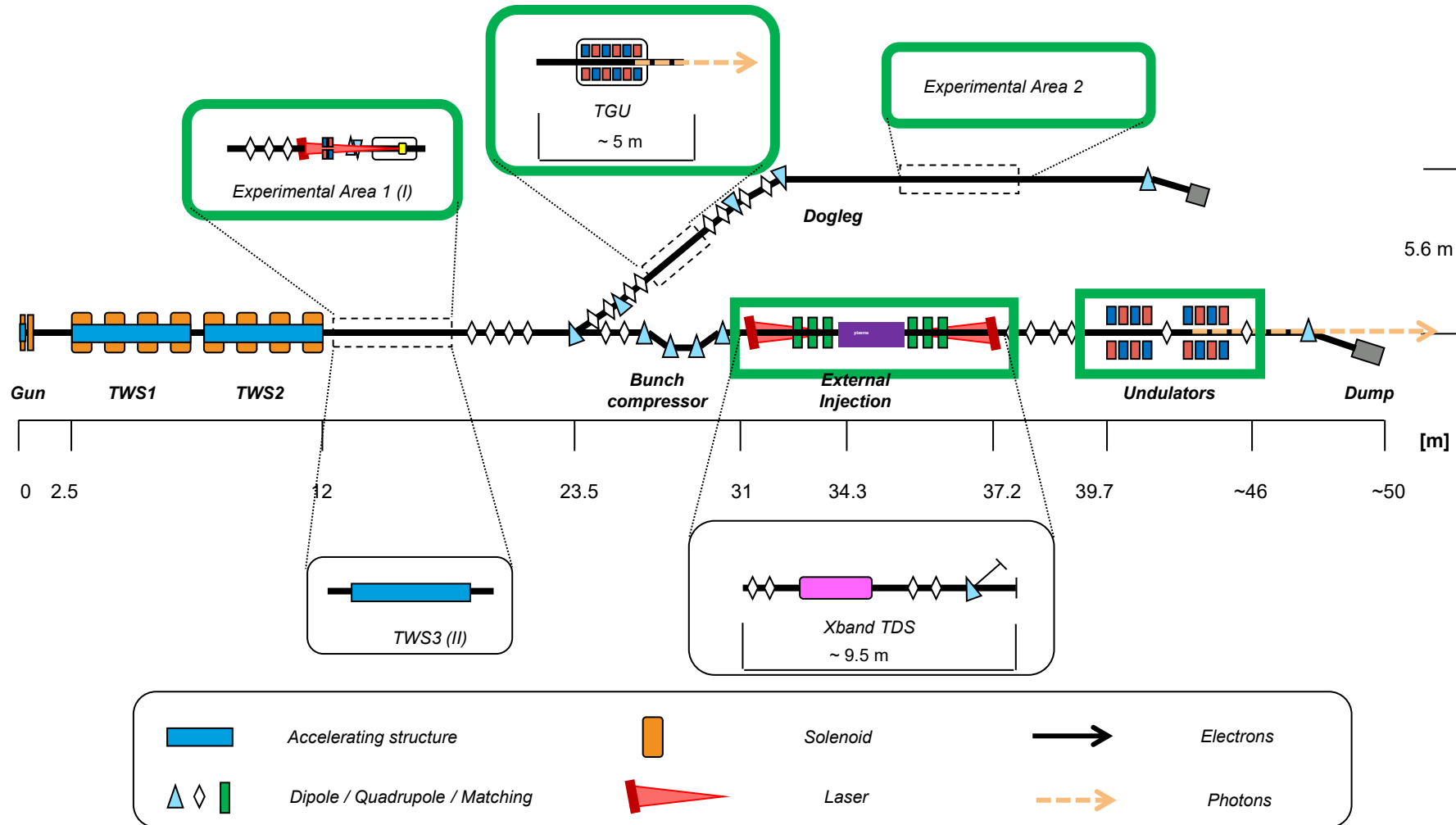
ARES parameters:

- **2.998 GHz** normal conducting linac
- **1-50 Hz** rep. rate, single bunch mode
- Energy: **100 MeV – 155 MeV**
- Typical final bunch charge : **0.5-30 pC**
- Typical final bunch length : **sub-fs to few fs**
- Arrival time jitter < **10fs RMS**

→ Ideally suited to inject into high-gradient novel concepts (ATHENAe)

ARES Layout and Installation Status

Work in progress...



Gun section



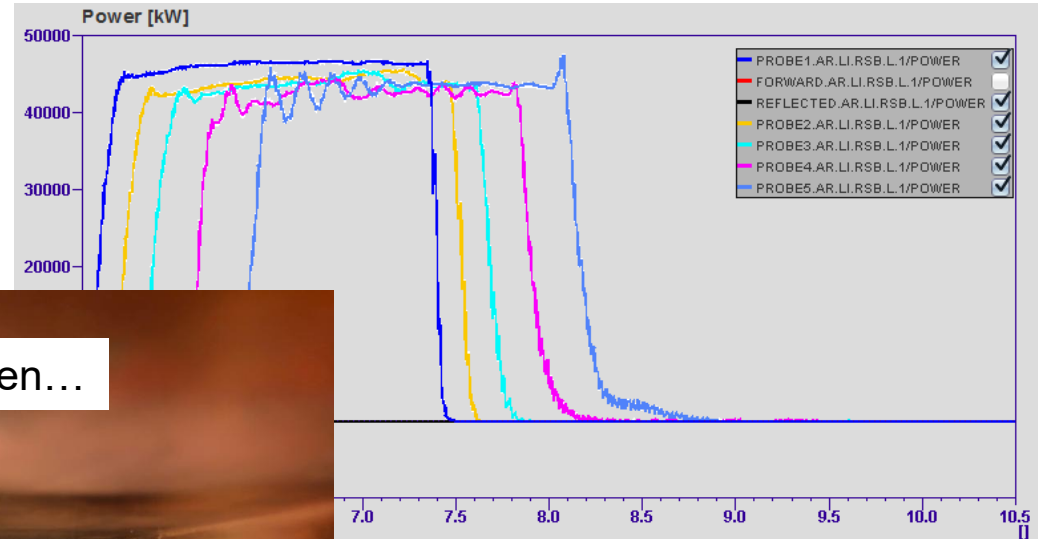
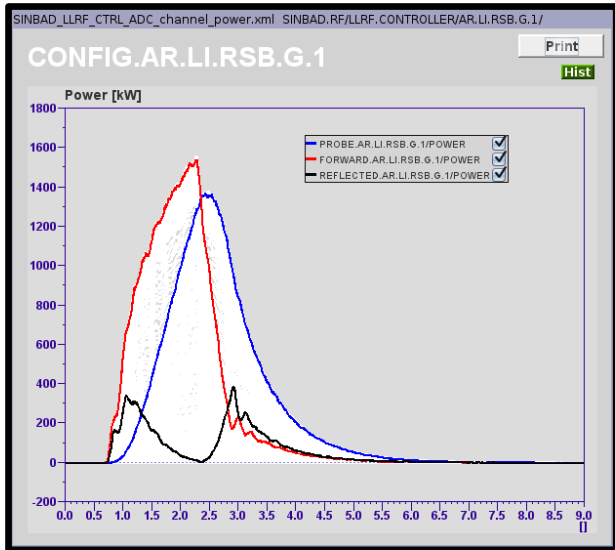
Linac section



Matching section

First RF conditioning

Gun and 2 travelling wave structures



GUN: 5.8 MW in the waveguide at 100 MHz
reached

Conditioning currently ongoing with

- repetition rate 1 Hz, RF pulse length 1.9 (1.5) μ s
- Nominal: 6 MW, 50 Hz and 4 μ s

...ed in solenoids with 20 MV/m gradient
...al peak power (45MW) with 1.9 (1.5) μ s
... and 25Hz rep. rate

Thank you

... and see you later at the poster!