

# ALPS-II/JURA update

Kick-off new PBC round - technology WG

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# Jura

- No further followed up on this

⇒ Wait for commissioning on ALPS II optics

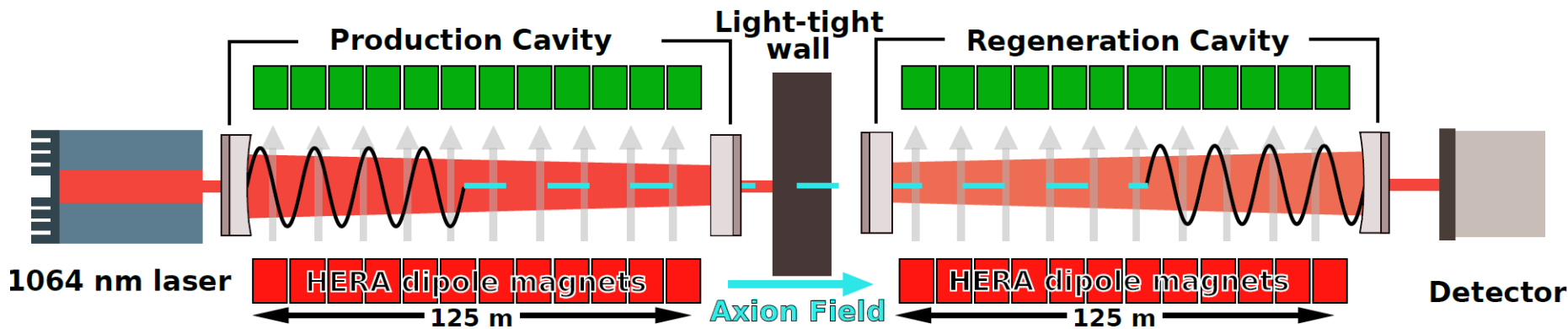
⇒ But there are some significant progress on ALPS II

# ALPS II – general reminder

## Dual Cavities

- Production cavity amplifies circulating field before wall
- Regeneration cavity amplifies regenerated field after the wall
- Both boost reconverted power by cavity power build-up

Photons at the detector: 
$$N_\gamma = \frac{1}{16} (g_{a\gamma\gamma} B L)^4 \eta \beta_R P_c \tau, \quad (m^2 \ll 2\omega/L)$$

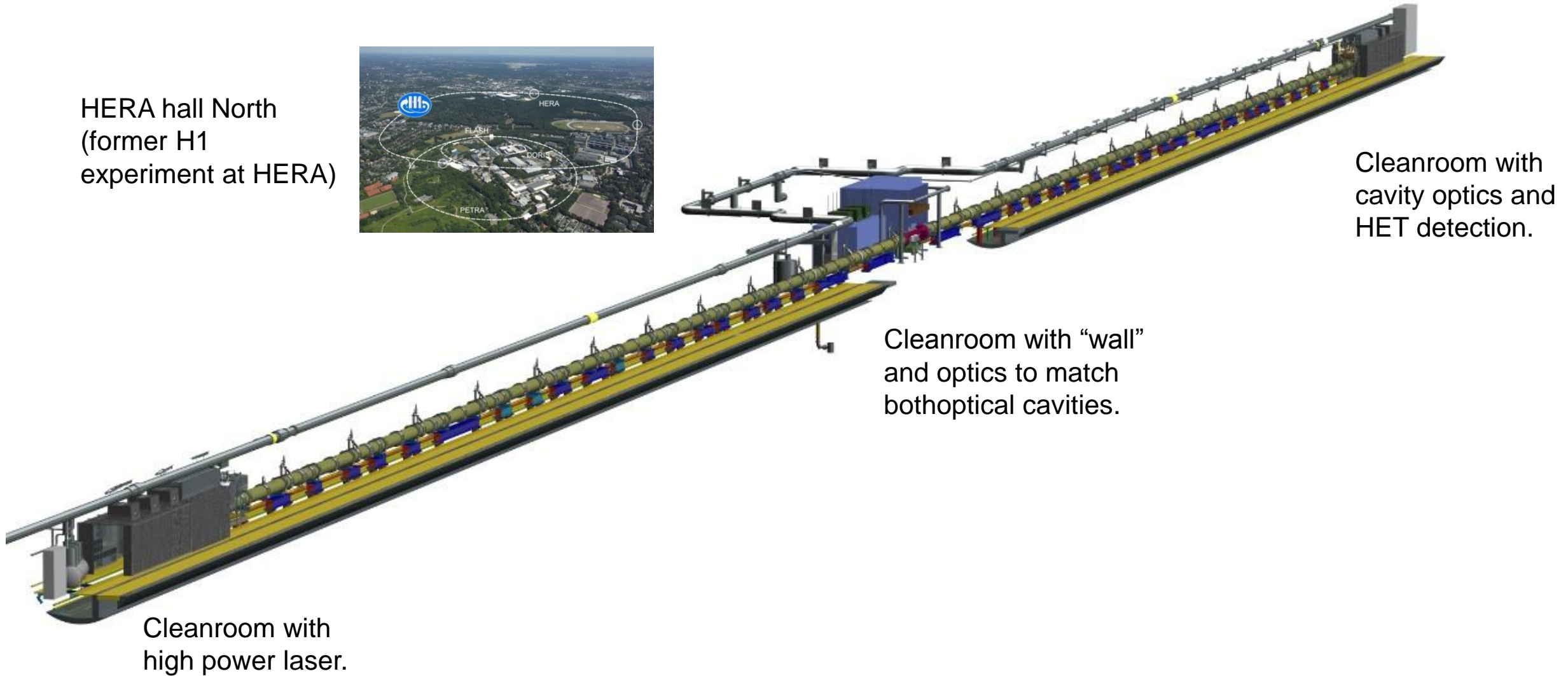


$g = 2.0 \times 10^{-11} \text{ GeV}^{-1}$   
 $B = 5.3 \text{ T}$   
 $L = 106 \text{ m}$   
 $P_c = 150 \text{ kW}$   
 $\beta = 16,000$

$N_\gamma = 1 \text{ photon per day!}$

# ALPS II – general reminder

HERA hall North  
(former H1  
experiment at HERA)



Cleanroom with  
high power laser.

Cleanroom with “wall”  
and optics to match  
both optical cavities.

Cleanroom with  
cavity optics and  
HET detection.

# ALPS II – general reminder

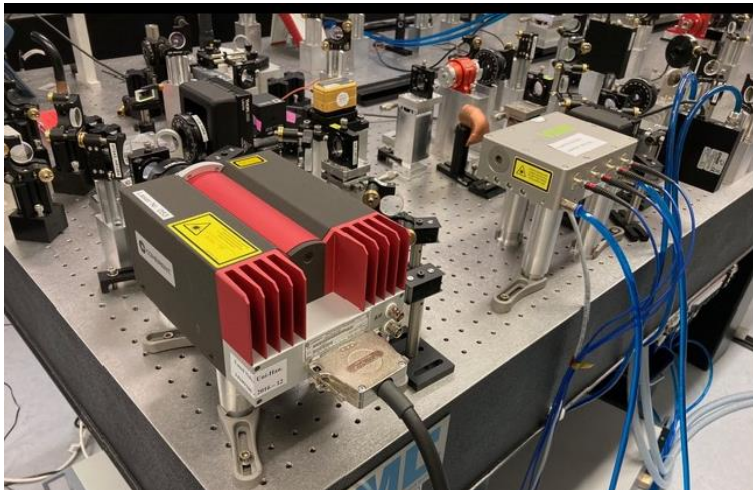
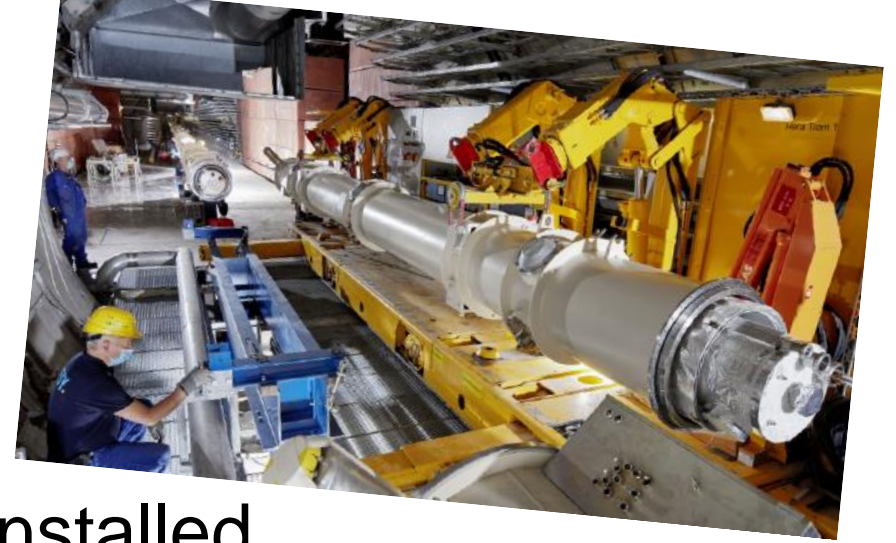


Cleanroom with  
high power laser.

# ALPS II – status

Actual situation:

- 1<sup>st</sup> magnet installed Oct. 2019
- All magnets installed and aligned
- Cleanrooms / laser rooms at end stations installed
- Central cleanroom still open
- Commissioning of optics starts after Corona lock down
- Cryogenic magnet operation planned for Fall 2021



# Thank you!

## Kontakt

**DESY.** Deutsches  
Elektronen-Synchrotron

[www.desy.de](http://www.desy.de)

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