EUROPEAN
PLASMA RESEARCH
ACCELERATOR WITH
EXCELLENCE IN
APPLICATIONS

EuPRAXIA

DESY interests

S. Antipov

1st WP9 Meeting, March 15th 2023

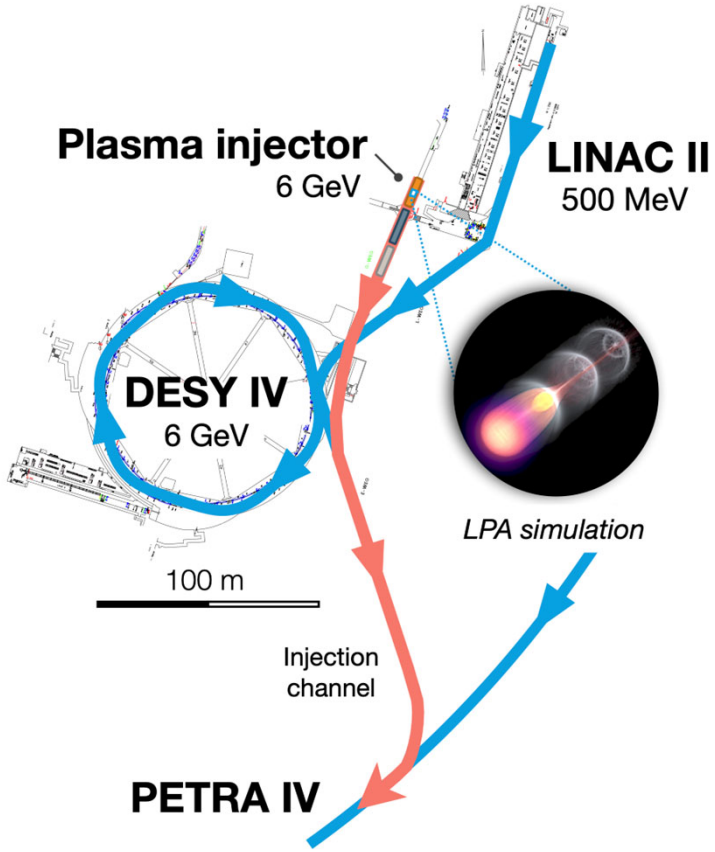
This project has received funding from the European Union´s Horizon Europe research and innovation programme under grant agreement No. 101079773

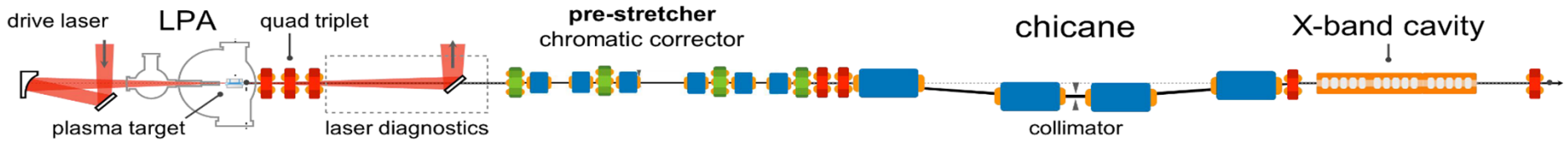
LPA injector for PETRA IV light source

Combining working, proven solutions to manipulate LPA beams

Energy	6 GeV
Bunch charge	100 pC
Energy spread	0.1 %
Norm. emit.	1 um
Rep. rate	2.5 (30) Hz
Laser pulse energy	20 J

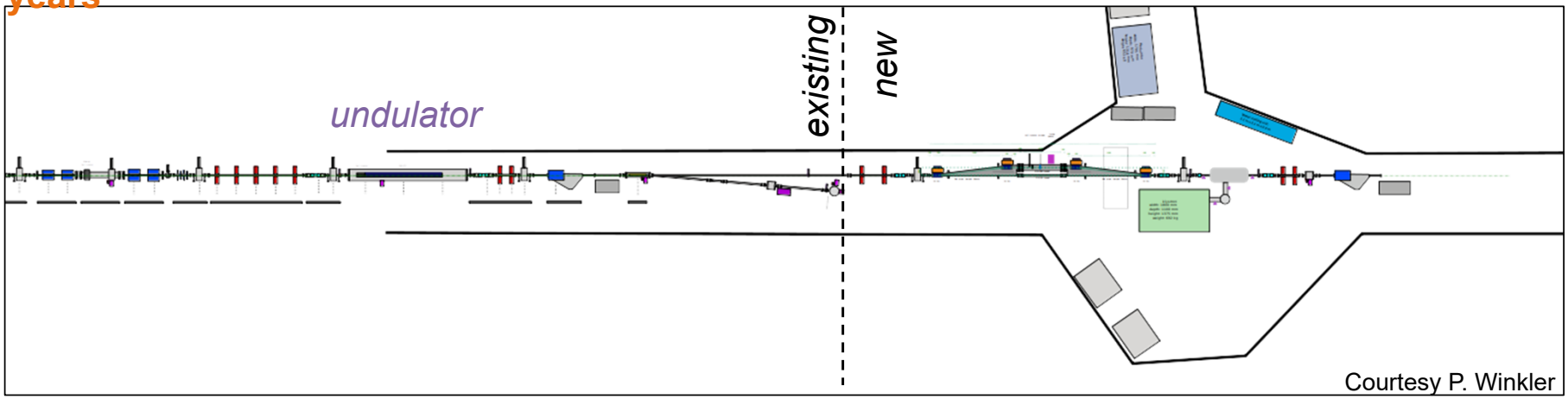
- CDR to be realeased in 2023
- Included in the PETRA IV project proposal
- R&D on laser, plasma cells starting now





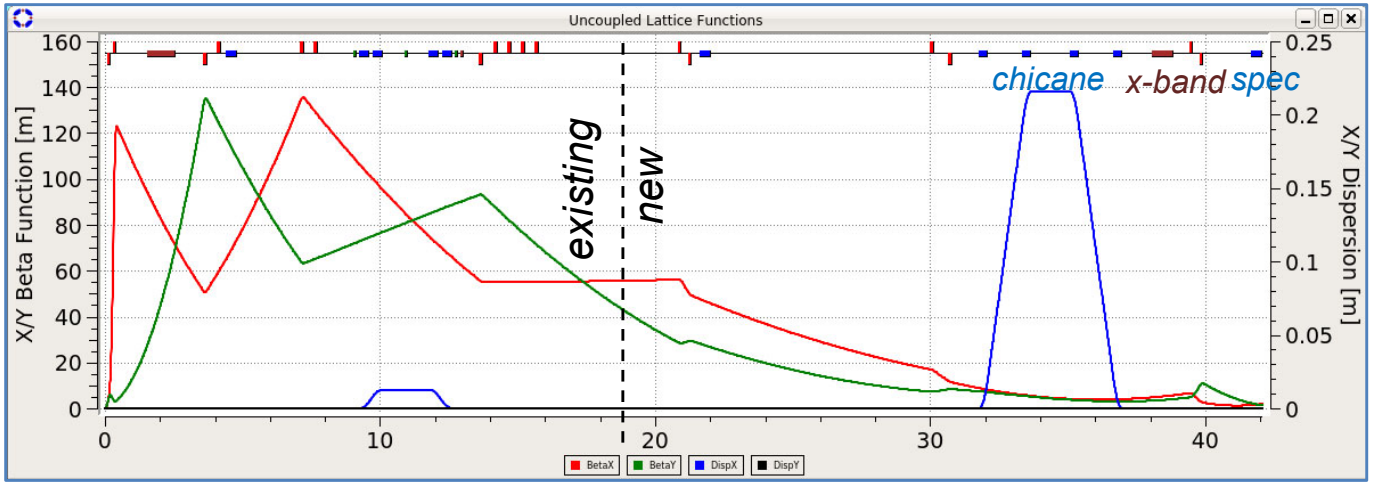
Proof-of-principle prototype at LUX

Building up on the existing LPA FEL infrastructure to demonstrate permille level energy spread in two years



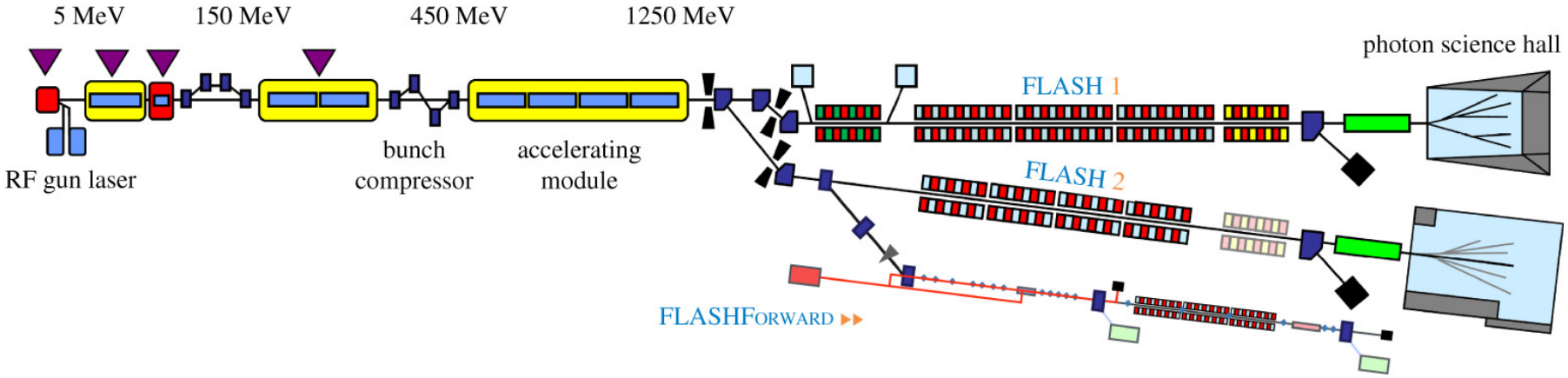
Existing LUX beamline

- 500 MeV range LPA FEL demostrator
- Collaborating w CERN on X-band
- Re-using HERA-era magnets



FLASHForward

Beam-driven plasma accelerator experiment at DESY



- Goal: high-quality plasma booster
- Research towards energy-spread preservation and high efficiency
- X-Band TDS for beam characterisation