H1 experimentet

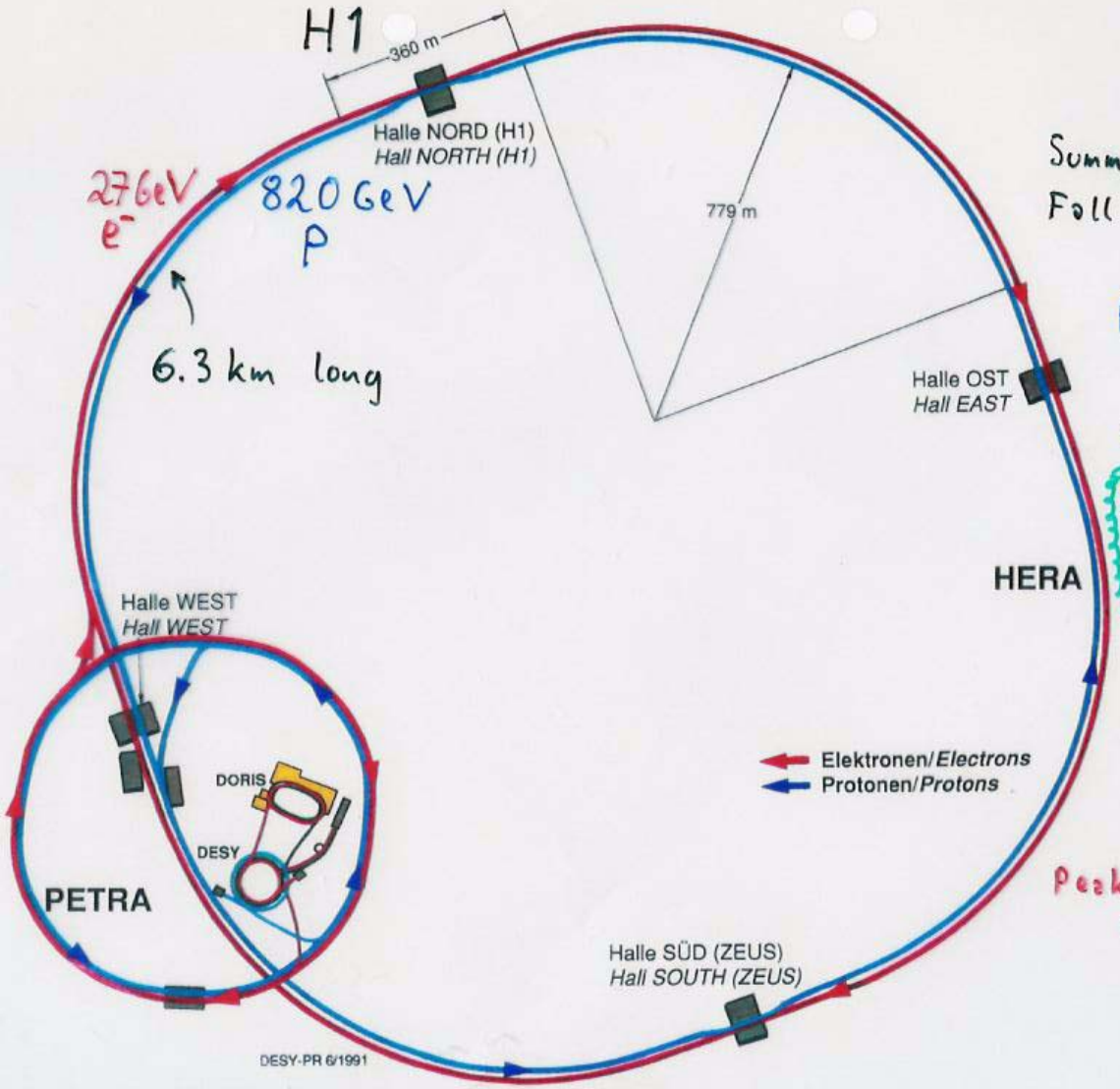
vid

HERA acceleratorn

på

DESY laboratoriet


HERA
N
W
PETRA



1992:

Summer run: $\int L = 1.5\ nb^{-1}$

Fall run: $\int L = 26.9\ nb^{-1}$

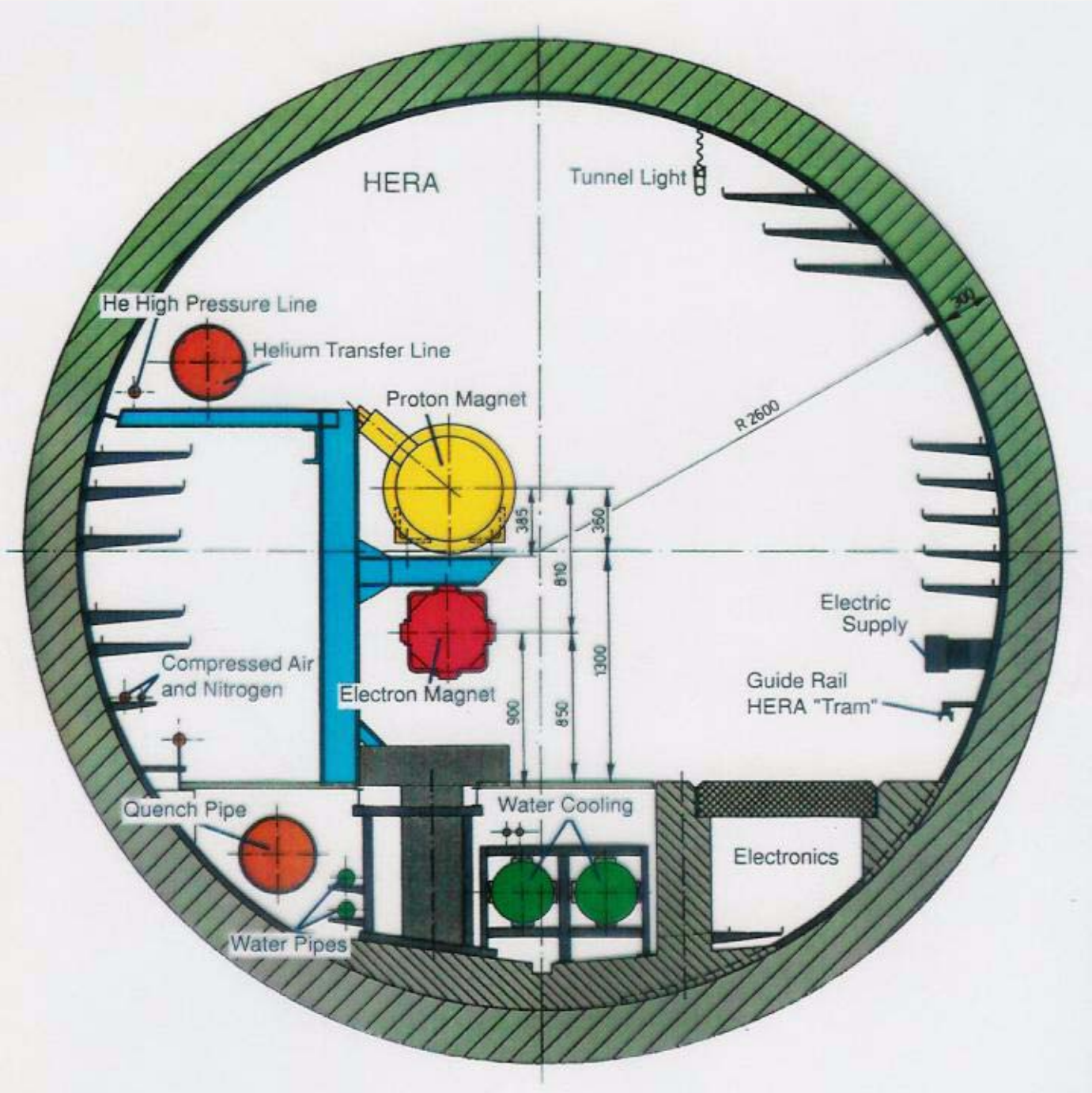
Peak Luminosity:
$\sim 2 \cdot 10^{29}\ cm^{-2} s^{-1}$
with 10 bunches

Design Luminosity:
$1.5 \cdot 10^{31}\ cm^{-2} s^{-1}$
with 210 bunches

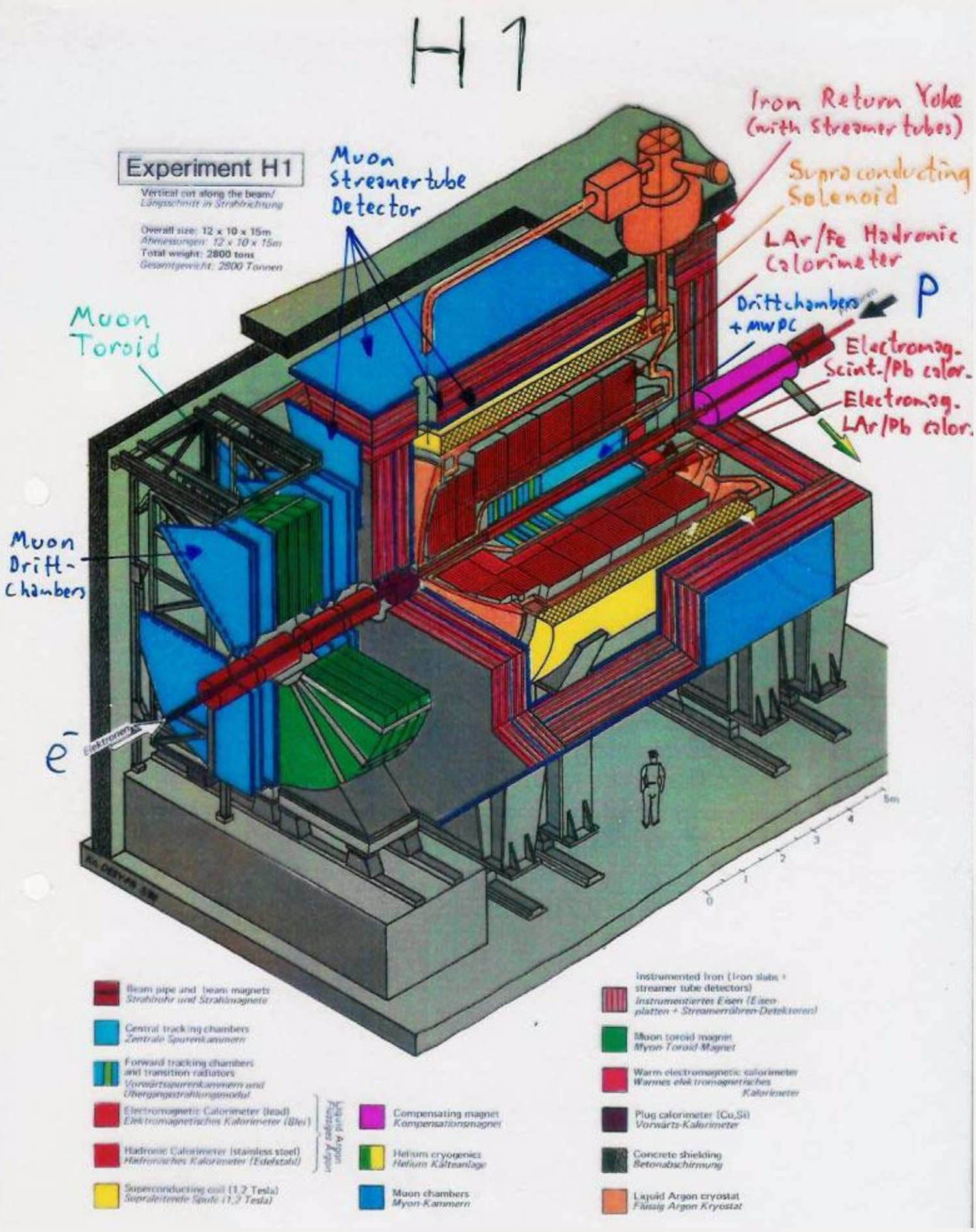
1993:

$\int L = 998\ nb^{-1}$

Peak Lum. = $1.5 \cdot 10^{30}\ cm^{-2} s^{-1}$
with 84 bunches


HERA
Tunnel Light
He High Pressure Line
Helium Transfer Line
Proton Magnet
R 2600
385
360
810
1300
900
850
Electric
Supply
Compressed Air
and Nitrogen
Electron Magnet
Guide Rail
HERA "Tram"
Quench Pipe
Water Cooling
Electronics
Water Pipes

H1


Experiment H1
Vertical cut along the beam/
Längsschnitt in Strahlrichtung
Overall size: 12 x 10 x 15m
Abmessungen: 12 x 10 x 15m
Total weight: 2800 tons
Gesamtgewicht: 2800 Tonnen
Iron Return Yoke (with Streamer tubes)
Muon Streamer tube Detector
Supra conducting Solenoid
LAr/Fe Hadronic Calorimeter
Drift chambers + MWPC
p
Muon Toroid
Electromag. Scint./Pb color.
Electromag. LAr/Pb color.
Muon Drift-Chambers
e⁻
Elektronen
0
1
2
3
4
5m
Beam pipe and beam magnets
Strahlrohr und Strahlmagnete
Central tracking chambers
Zentrale Spurenkammern
Forward tracking chambers and transition radiators
Vorwärtsspurenkammern und Übergangsstrahlungsmodul
Electromagnetic Calorimeter (lead)
Elektromagnetisches Kalorimeter (Blei)
Hadronic Calorimeter (stainless steel)
Hadronisches Kalorimeter (Edelstahl)
Superconducting coil (1.2 Tesla)
Supraleitende Spule (1.2 Tesla)
Liquid Argon
Compensating magnet
Kompensationsmagnet
Helium cryogenics
Helium Kälteanlage
Muon chambers
Myon-Kammern
Instrumented Iron (Iron slabs + streamer tube detectors)
Instrumentiertes Eisen (Eisenplatten + Streamerröhren-Detektoren)
Muon toroid magnet
Myon-Toroid-Magnet
Warm electromagnetic calorimeter
Warmes elektromagnetisches Kalorimeter
Plug calorimeter (Cu,Si)
Vorwärts-Kalorimeter
Concrete shielding
Betonabschirmung
Liquid Argon cryostat
Flüssig Argon Kryostat