

Welcome to the HERA-LHC-Workshop

Greetings from Hamburg



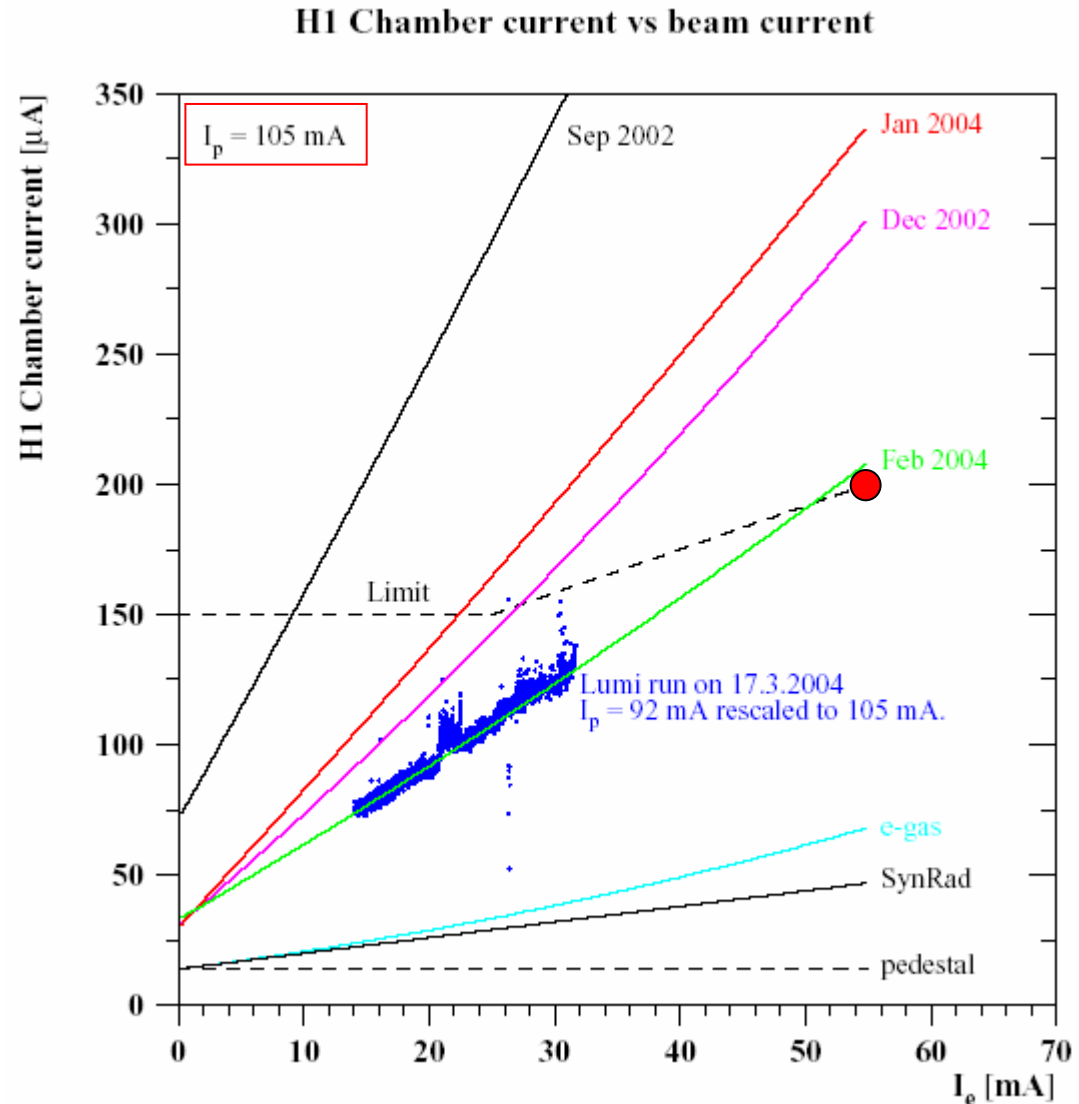
Background in HERA Experiments

Workshop is timely:

Background in HERA collider expts.:

- ep: "worst-case scenario":
 - e^+ with SR \rightarrow bad vacuum
 - p large $\sigma \rightarrow$ BG

BG solved in an heroic, collaborative effort by HERA and HERA-expts.



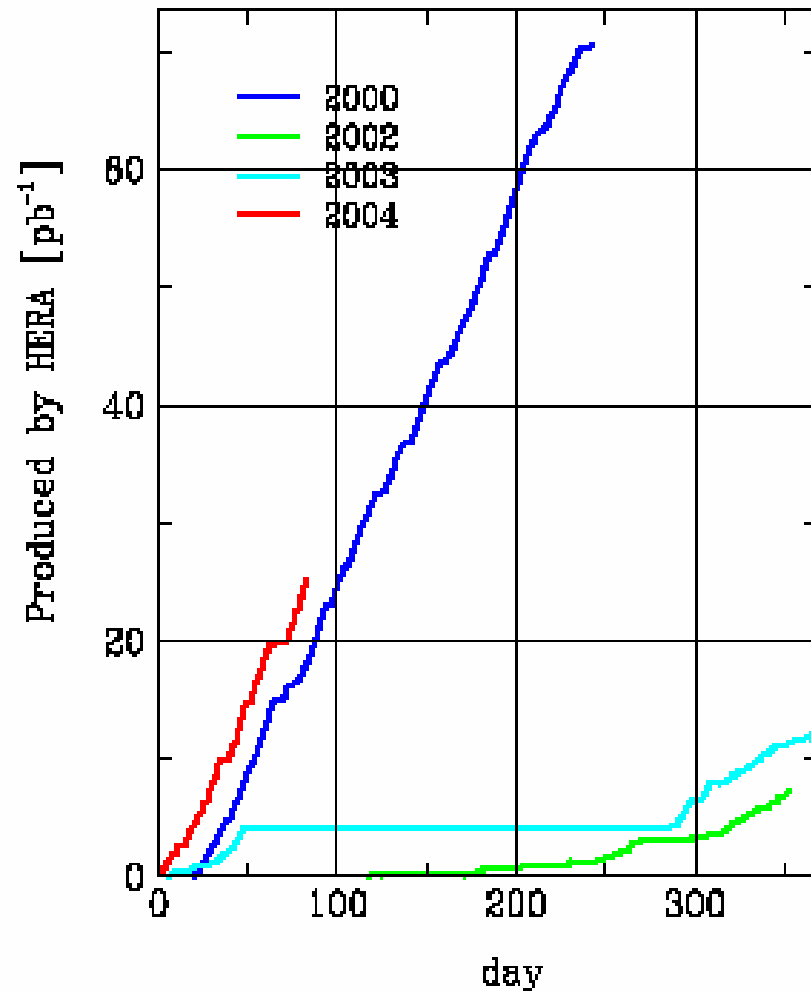
Luminosity

Workshop is timely:

HERA luminosity is starting to surpass the 2000 values:

- new record: $2.9 \times 10^{31} \text{cm}^{-2} \text{s}^{-1}$
- HERA I design: 1.5×10^{31}
- HERA II designs: 5×10^{31}

INTEGRATED LUMINOSITY



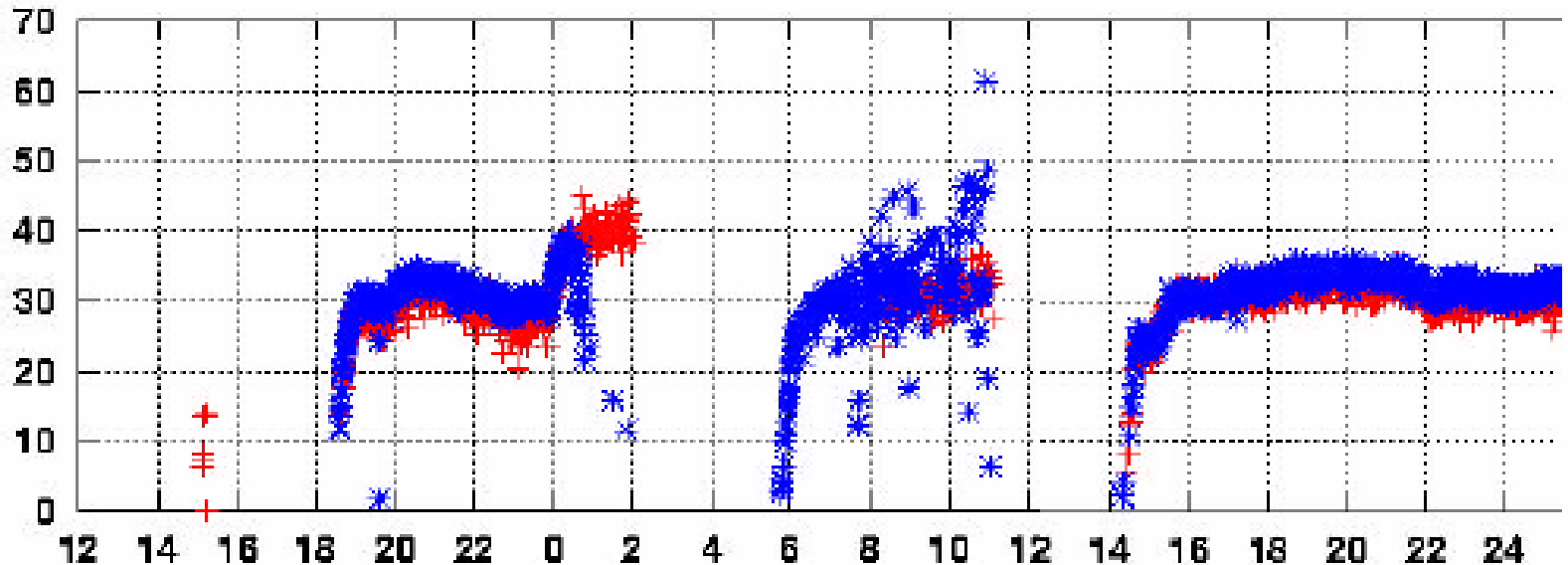
Lepton polarisation

Workshop is timely:

Thu Mar 11 12:00 2004

HERA-e Polarisation

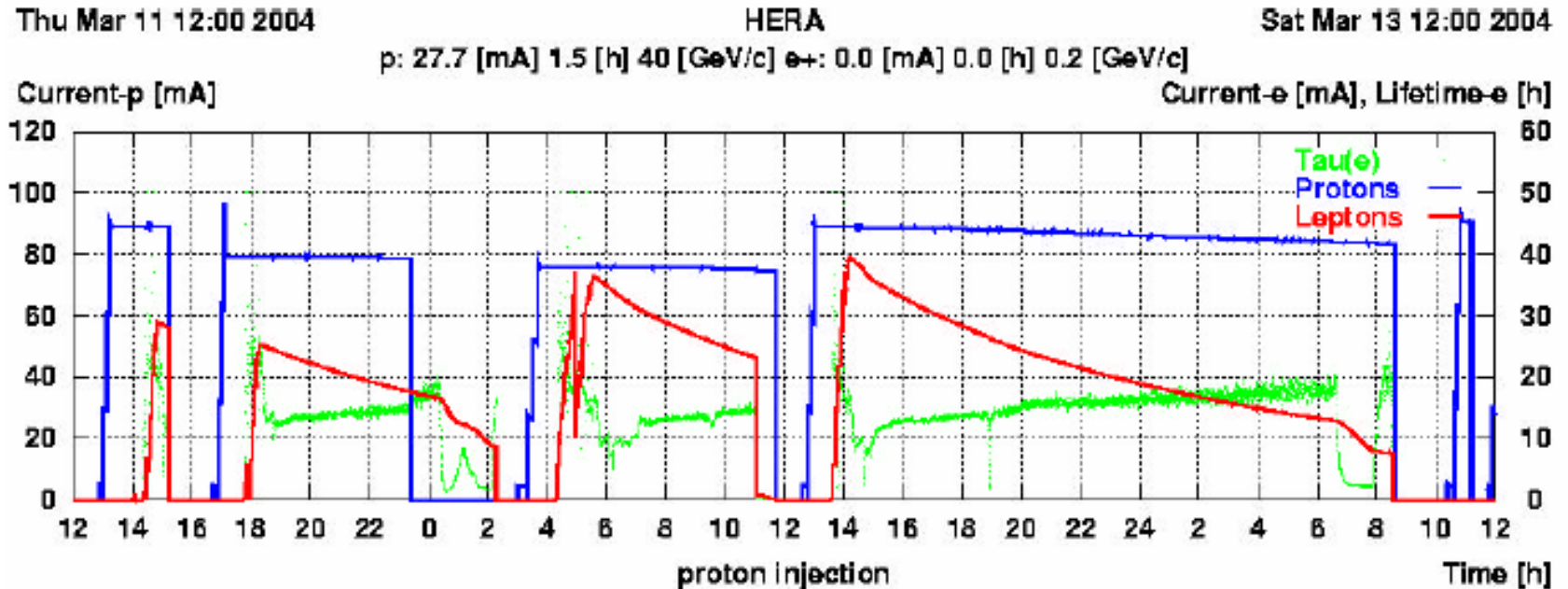
Polarisation [%]



$O(40\%)$ polarisation has been achieved for all 3 experiments
(optimisation still to be completed $\rightarrow O(50\%)$)

HERA II Luminosity

Workshop is timely:

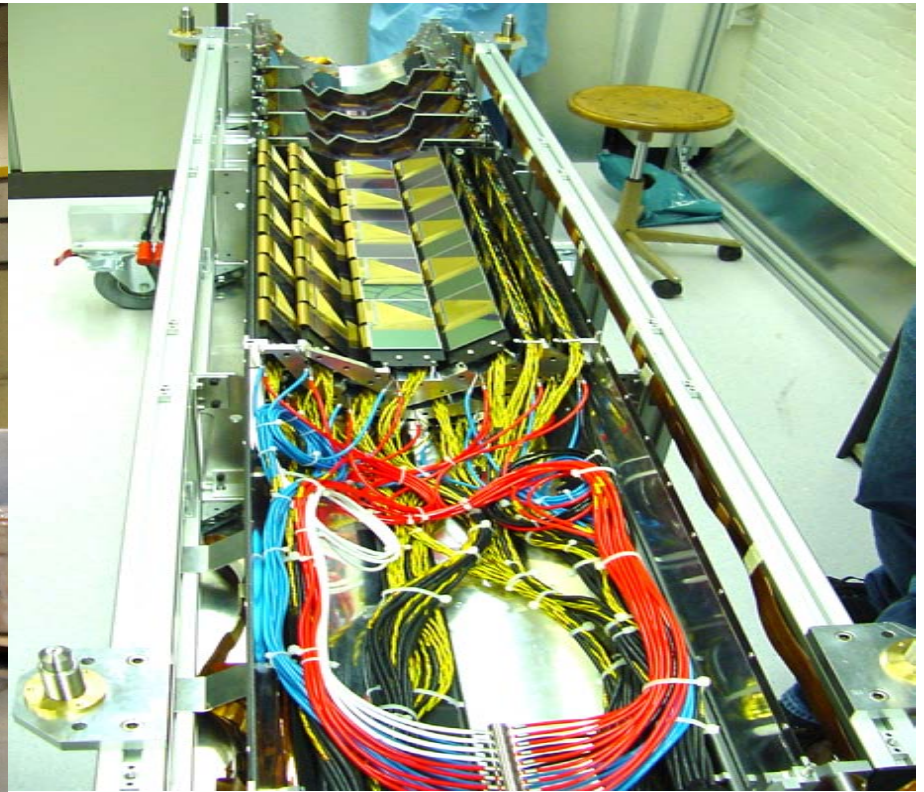
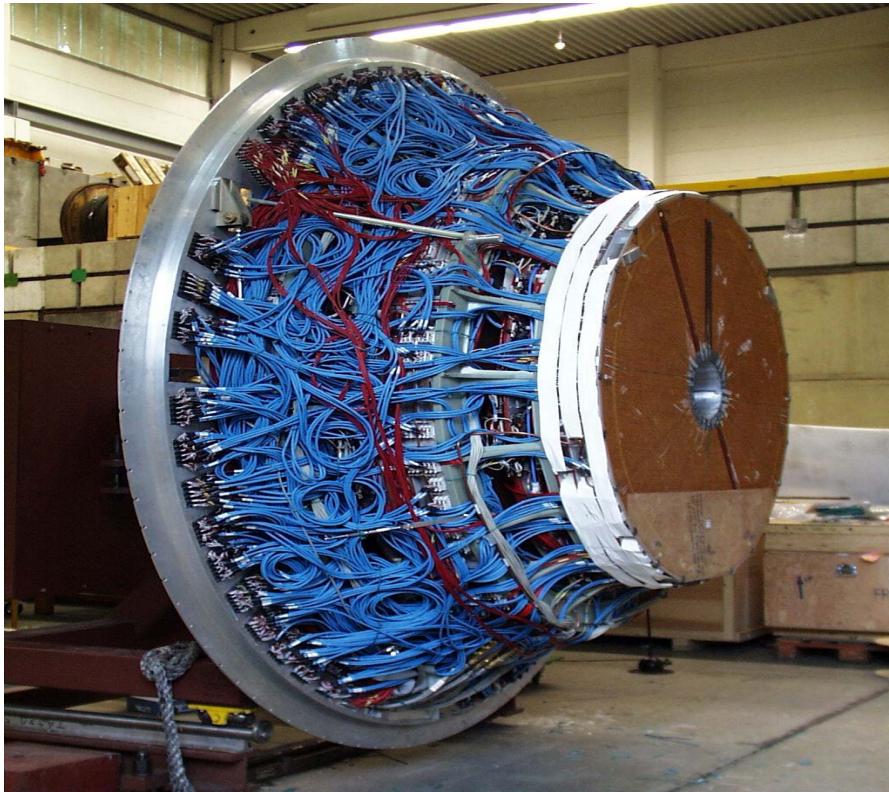


operation of HERA is getting more efficient and reliable
(600 nb⁻¹ per fill of 12 hours achieved)

→ luminosity goal HERA II $\sim (>?) 700 \text{ pb}^{-1} e^+/e^-$ both pol. until mid 2007

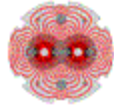
HERA II - Upgrade of Experiments

Workshop is timely:



major upgrade of HERA detectors - demonstrated performance

Progress LHC

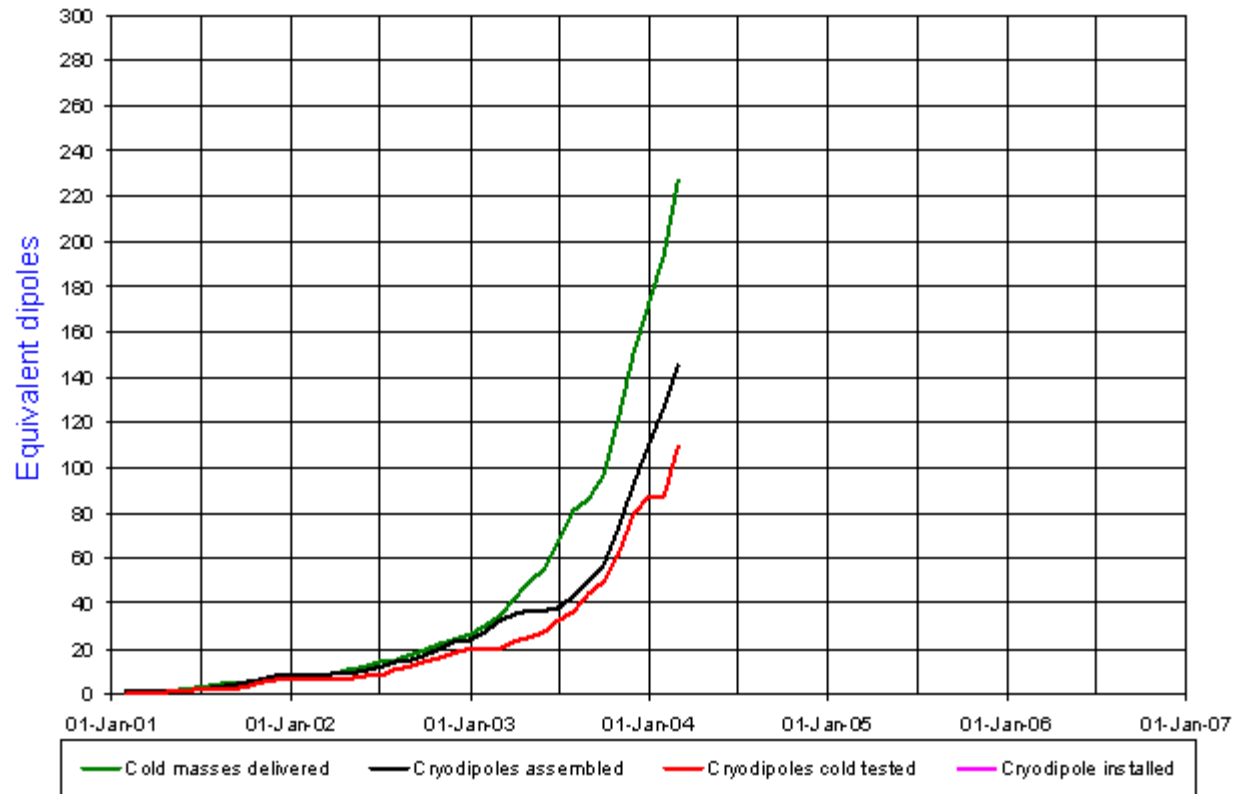


LHC Progress
Dashboard



Workshop
is timely:

Cryodipole overview



Updated 29 Feb 2004

Data provided by D. Tommasini AT-MAS

LHC and its experiments are progressing to be ready in 2007

Summary

- HERA I has already contributed much to the understanding of high energy QCD (SF – diffraction – α_s – “HERA-events” + ...)
- HERA II is getting under way – it should have an other significant impact on our understanding of QCD (SF at high and low x – parton correlations + ...)
- LHC is progressing towards first data taking in 2007 – make sure that we do not miss measurements at HERA which are important for LHC physics
- stimulate theoretical and phenomenological work and develop new tools required to understand the complex physics of final states at HERA and LHC

We look forward to an inspiring and successful workshop and a fruitful HERA-LHC scientific collaboration

Welcome for the Closing Meeting at DESY

