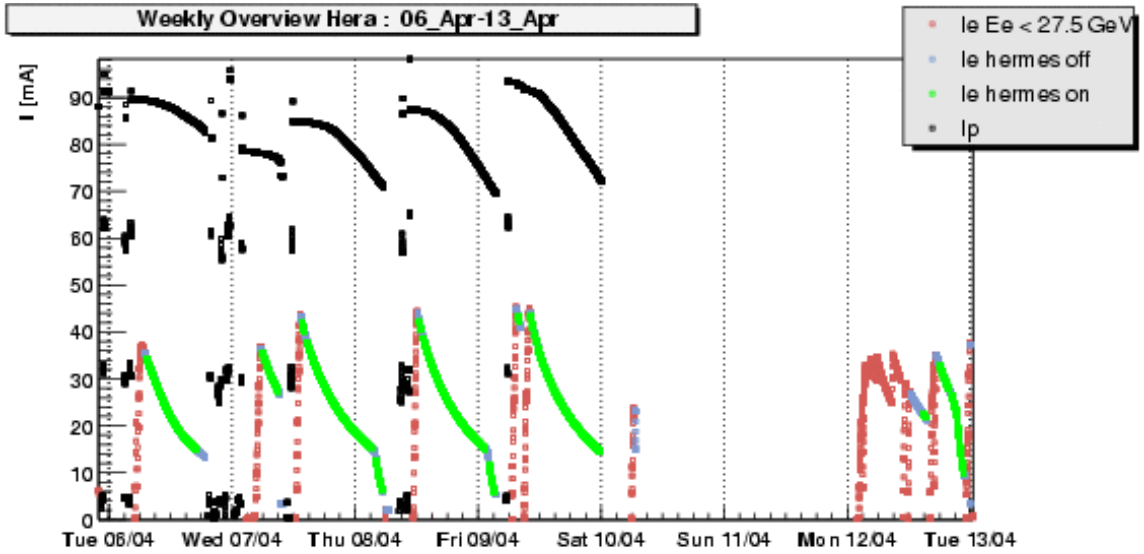
The Status of hermes

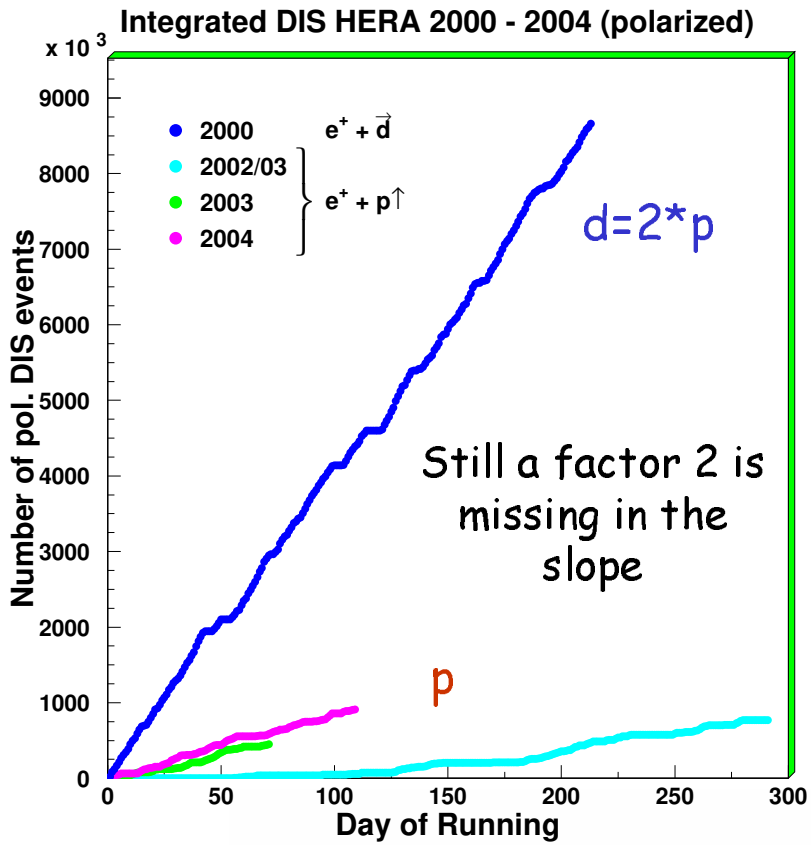
High efficiency in Data Taking (green = ok)

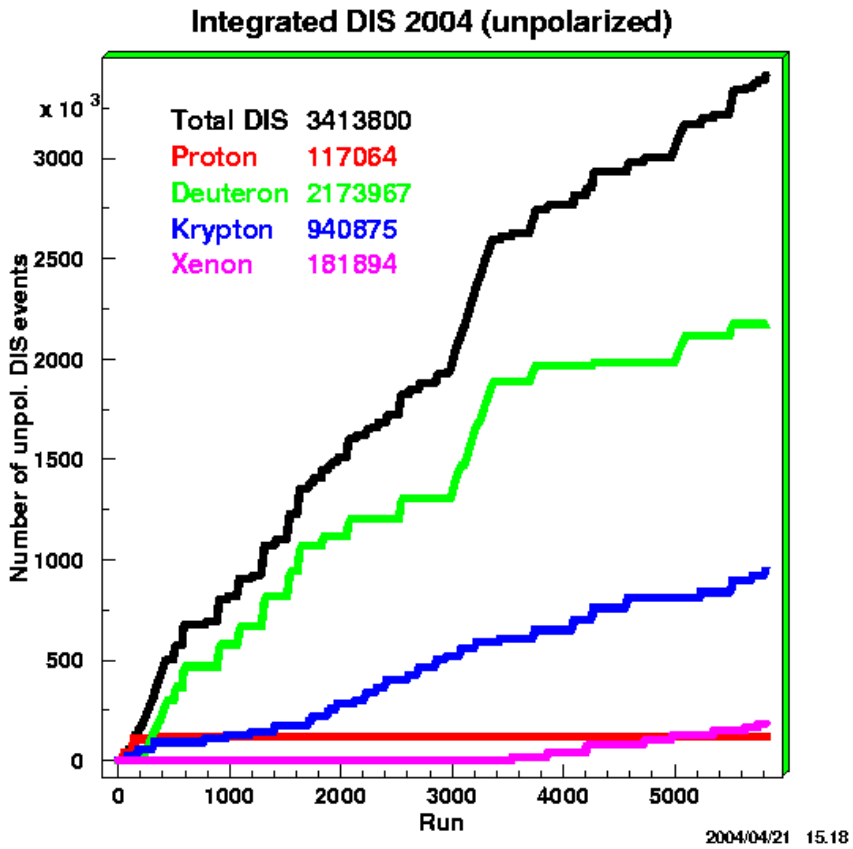


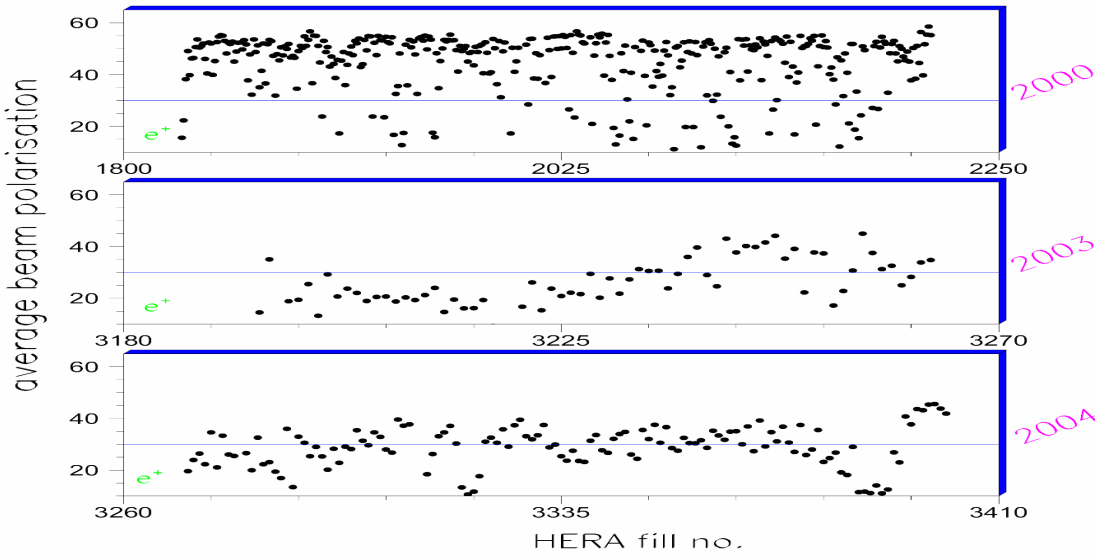
- Background most of the time under control
- Target Polarization >85% with 99% of H_2 dissociation

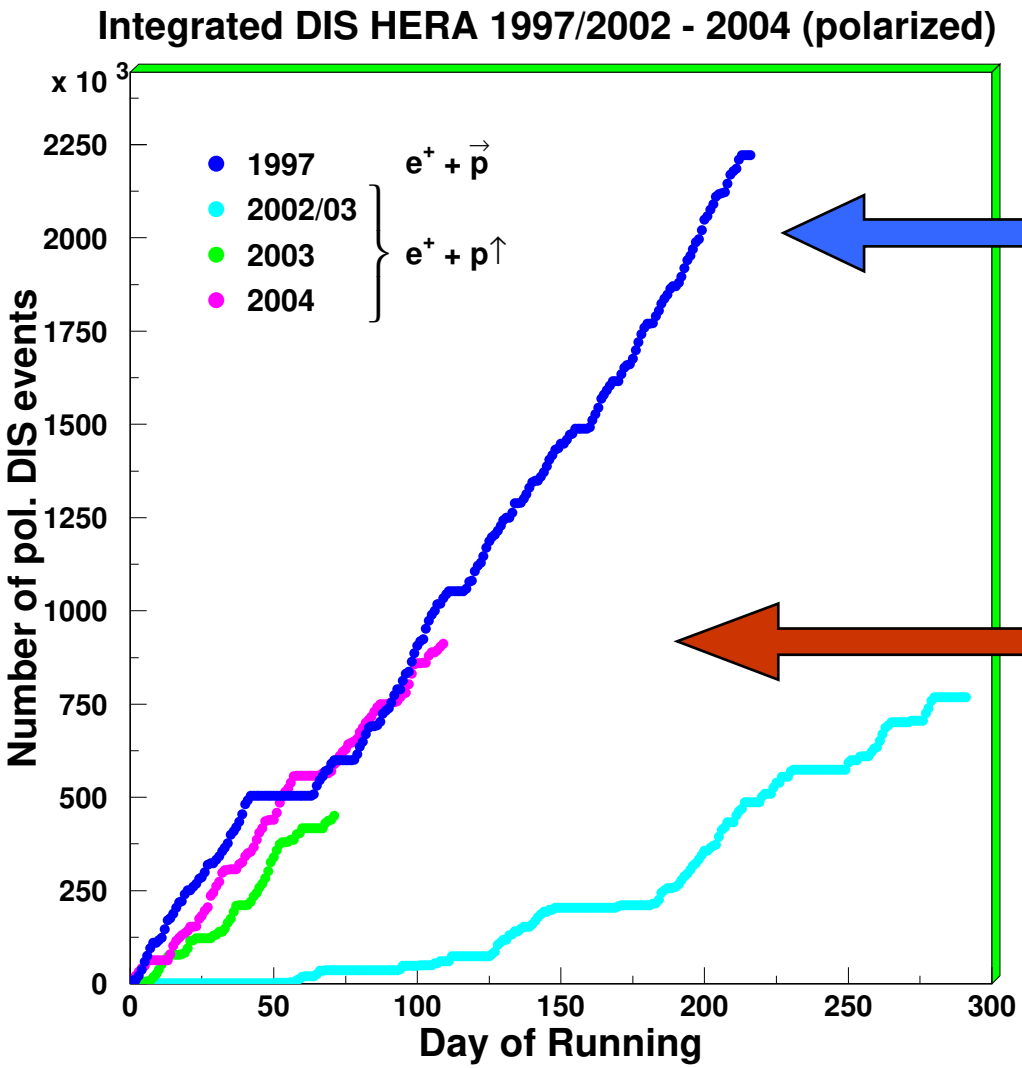
The Spectrometer is fully operative!

Pasquale Di Nezza, HERA Coordination Meeting, April 2004


Integrated DIS HERA 2000 - 2004 (polarized)
x 10 3
Number of pol. DIS events
Day of Running
2000
2002/03
2003
2004
e+ + d
e+ + p↑
d=2*p
Still a factor 2 is missing in the slope
p


Integrated DIS 2004 (unpolarized)
x 10 3
Number of unpol. DIS events
Run
Total DIS 3413800
Proton 117064
Deuteron 2173967
Krypton 940875
Xenon 181894
2004/04/21 15.18


average beam polarisation
HERA fill no.
2000
2003
2004
e+



Larger target cell

Small target cell (50% density)

Operations until next shutdown

- Continuing taking transversely polarized H
- Continuing taking unpolarized high density End-of-Fill runs: (D, Kr, Xe)

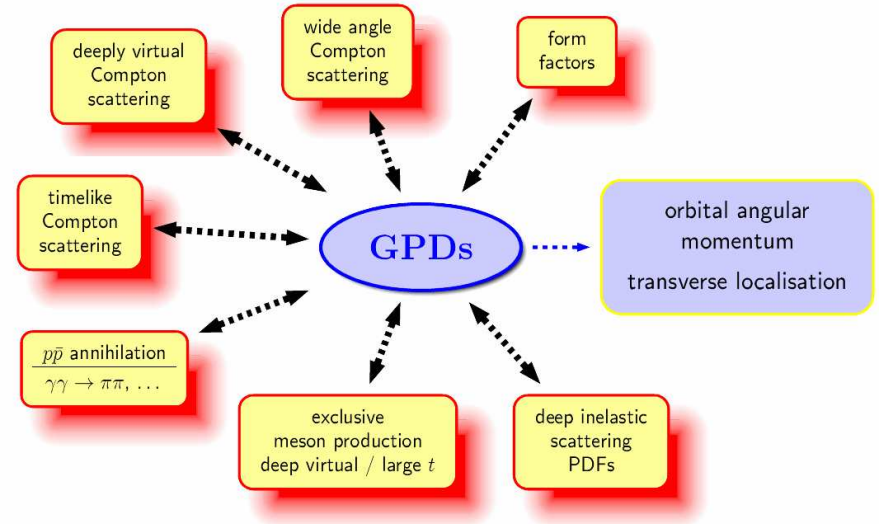
A beam polarization >50% is strongly expected

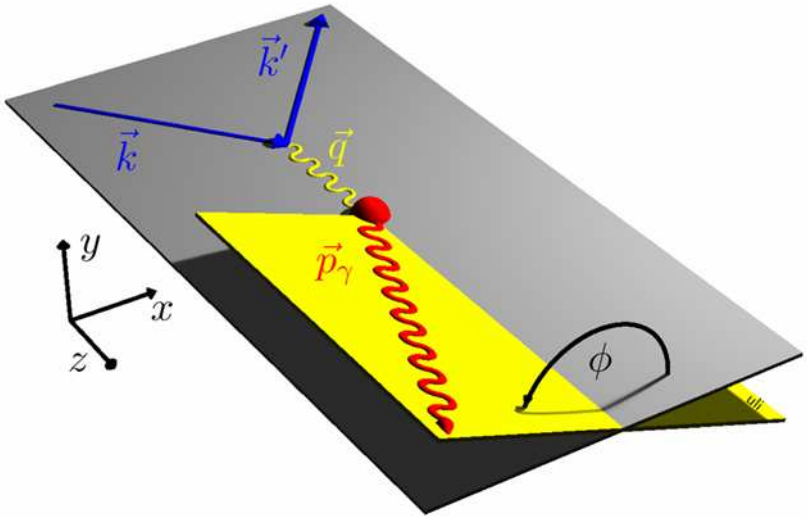
Summer shutdown activities

- Minor repairs within 2 weeks of working days in Summer 2004:
  - Λ-wheels
  - Drift Vertex Chambers
  - Target
  - Anti-Ageing Cure for MC
  - DAQ modification for Recoil
- The Recoil Detector will be installed in ~4 weeks latest in Summer 2005

Long Term Schedule

In order to obtain the maximum physics output from the Recoil Project an e^+/e^- switch is necessary during that time.





$$d\sigma(\vec{e}^{+}p) - d\sigma(\overleftarrow{e}^{+}p) \sim \sin(\Phi)\times \mathrm{Im}\, M^{1,1}$$

$$d\sigma(e^{+}p) - d\sigma(e^{-}p) \sim \cos(\Phi)\times \mathrm{Re}\, M^{1,1}$$

Contains full x_{bj}-dep of the GPD $H^q(x,\xi,t)$.

Not accessible by other processes !

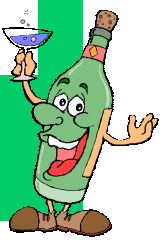
Unique facility for GPD: HERA

Long Term Schedule

Scen.	04	04	05	05	06	06	07	e^+	e^-	sum
1	e^+ 70	e^+ 30	e^+ 170	e^- 15	e^- 150	e^+ 30	e^+ 230	e^+ 530	e^- 165	e^++e^- 695
2	e^+ 70	e^+ 30	e^+ 170	e^- 15	e^- 150	e^- 45	e^- 160	e^+ 270	e^- 370	e^++e^- 640
3	e^+ 70	e^- 10	e^- 110	e^- 30	e^- 150	e^+ 30	e^+ 230	e^+ 330	e^- 300	e^++e^- 630
4	e^+ 70	e^+ 30	e^- 90	e^- 30	e^- 150	e^+ 30	e^+ 230	e^+ 360	e^- 270	e^++e^- 630

Not acceptable: no e+/e- switch during Recoil

~Not acceptable: e+/e- switch after Recoil installation, too risky (e.g. 1998)

Not optimized for the trans. polar. program
Time for tuning + low current Nov '04 – Feb '05

Completely happy with the scenario n.3