

Worries of RECFA members 4 years ago

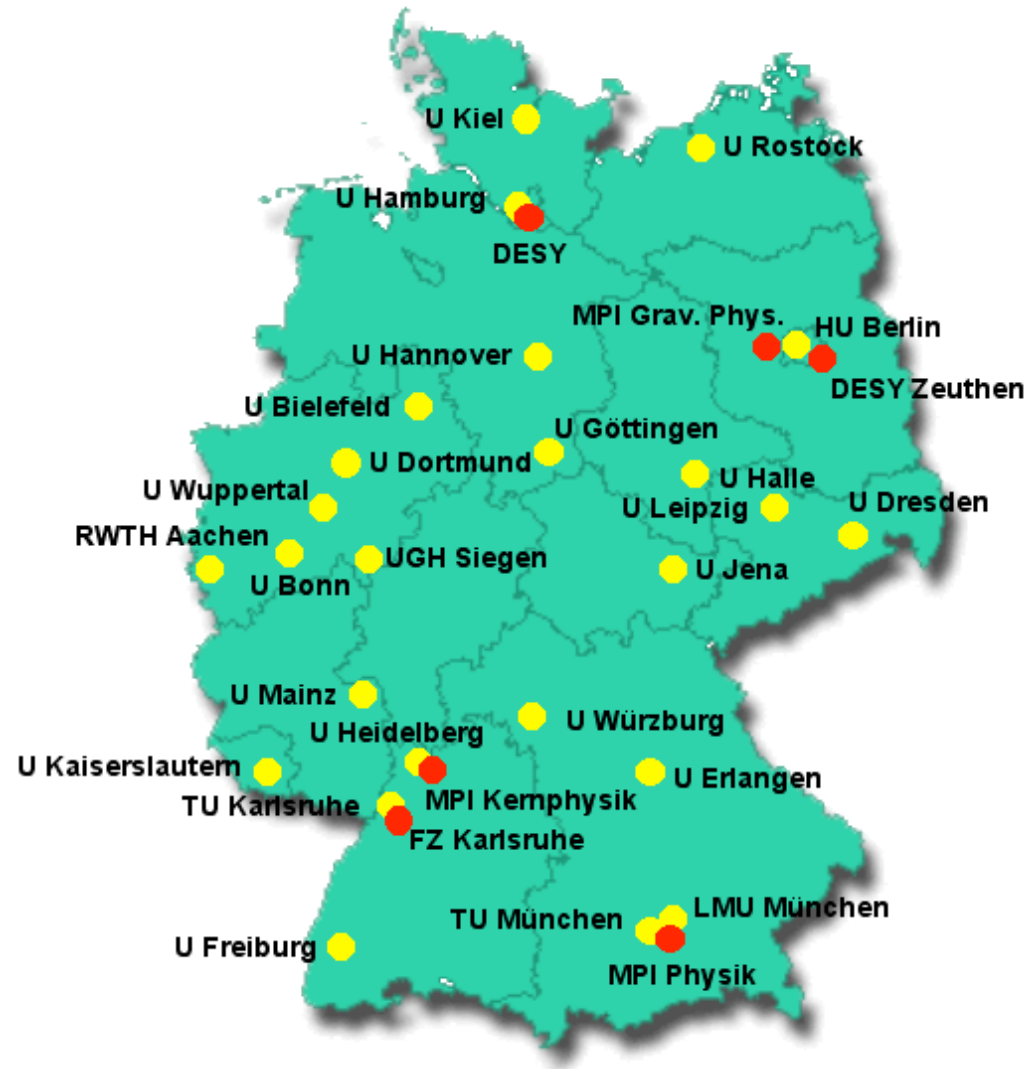
.... there remained a lack of students at the doctoral level, this was unlikely to change qualitatively in the absence of satisfactory physicist salaries and career paths.....

.... a substantial age difference between outgoing doctoral students in Germany and the UK. This was identified as due to military service, a 13-year high school (as opposed to 12) in most Ländern and a longer diploma research period (nominally 1 year but normally 2 years). It was agreed that a shortened period would be desirable. The typical age for permanent employment was presently ~34 years

Issues to be adressed

- **Education** (students, Ph.D., age, graduate schools)
- **HEP Career** (prospects for permanent employment)
- **Financial** (federal, regional)
- **Organisational**

HEP in Germany - Overview

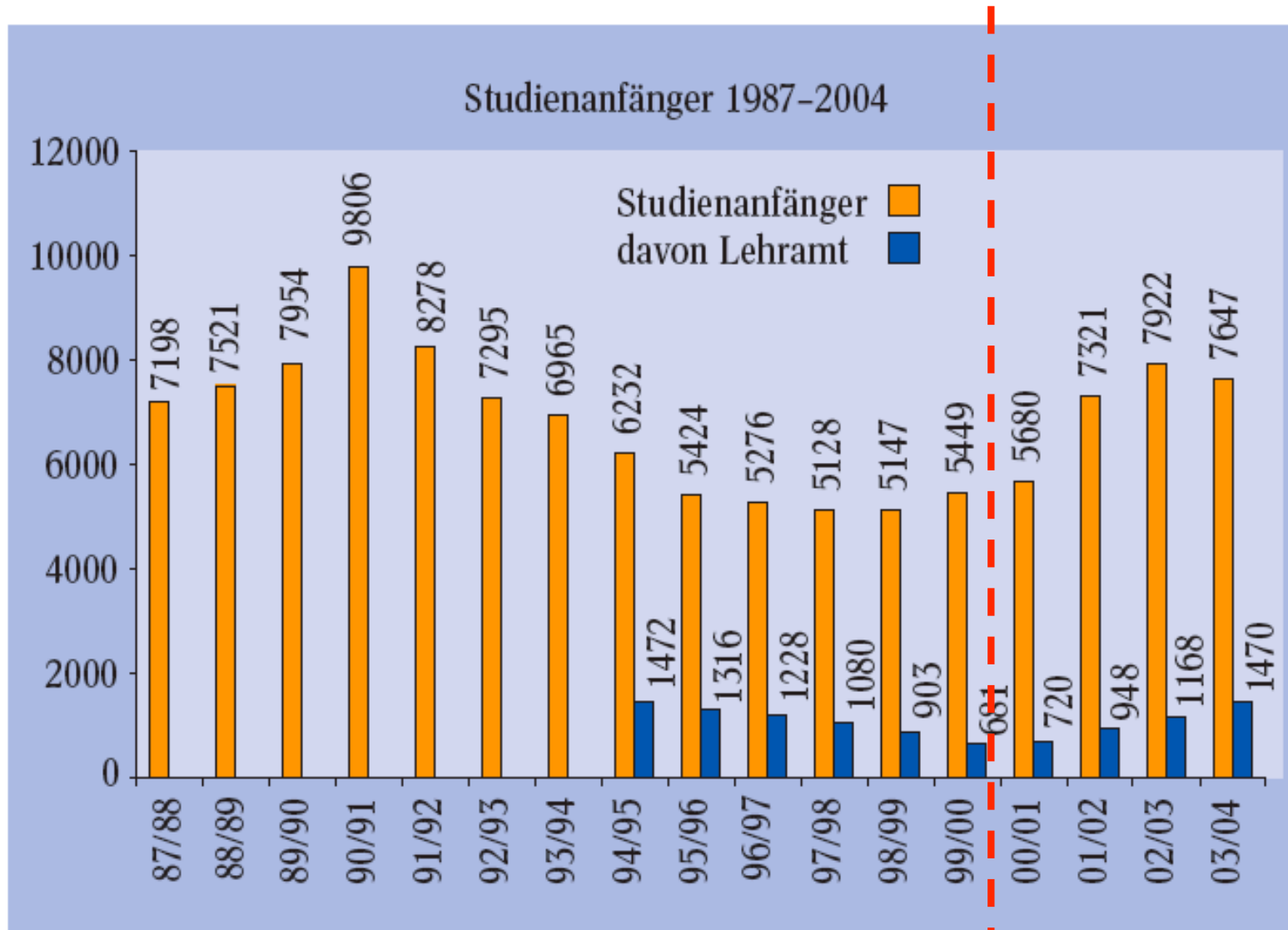


25 University Groups

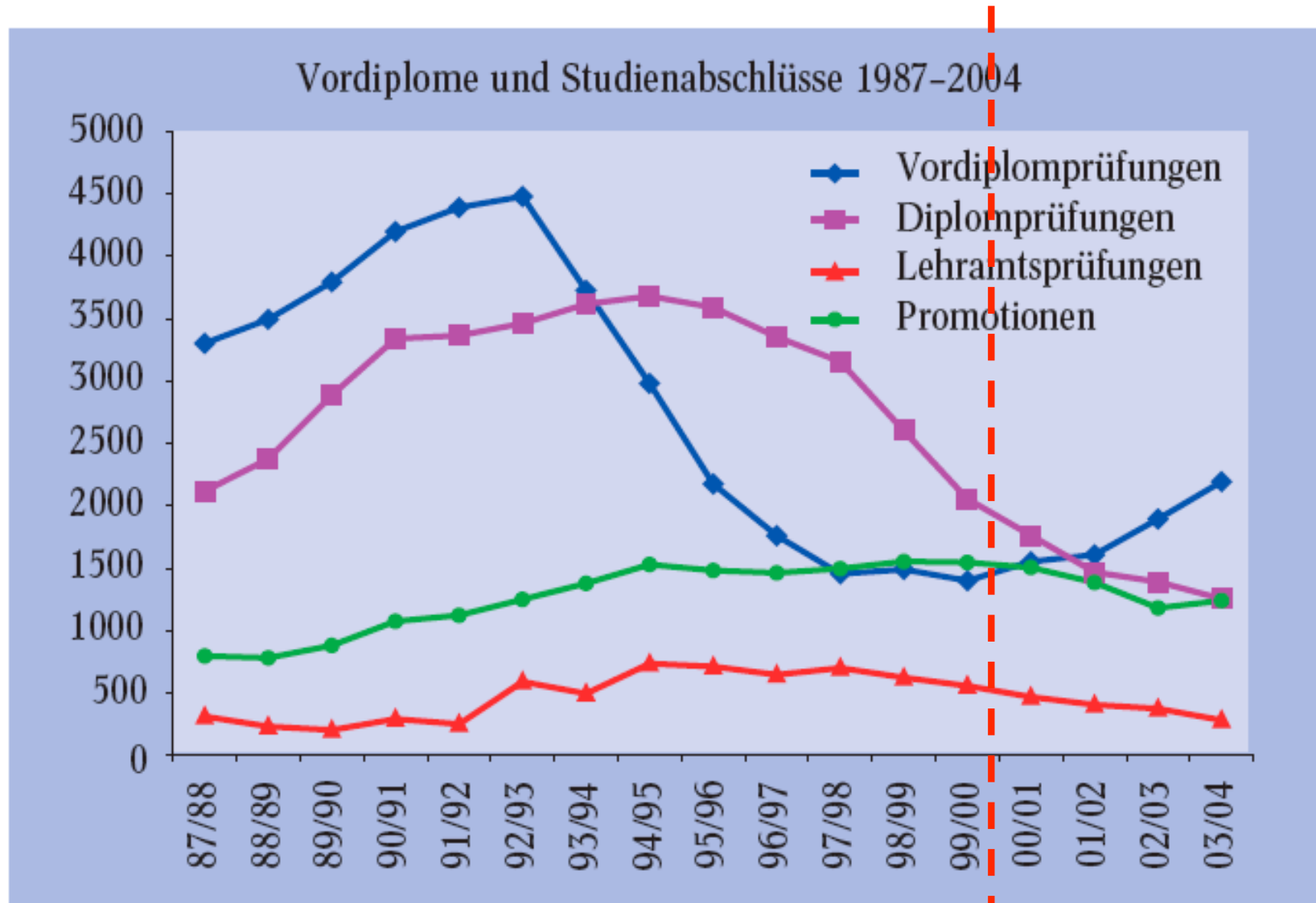
6 Research Institutes
(Helmholtz, Max-Planck)

Source : „Particle Physics in
Germany“ (2002)

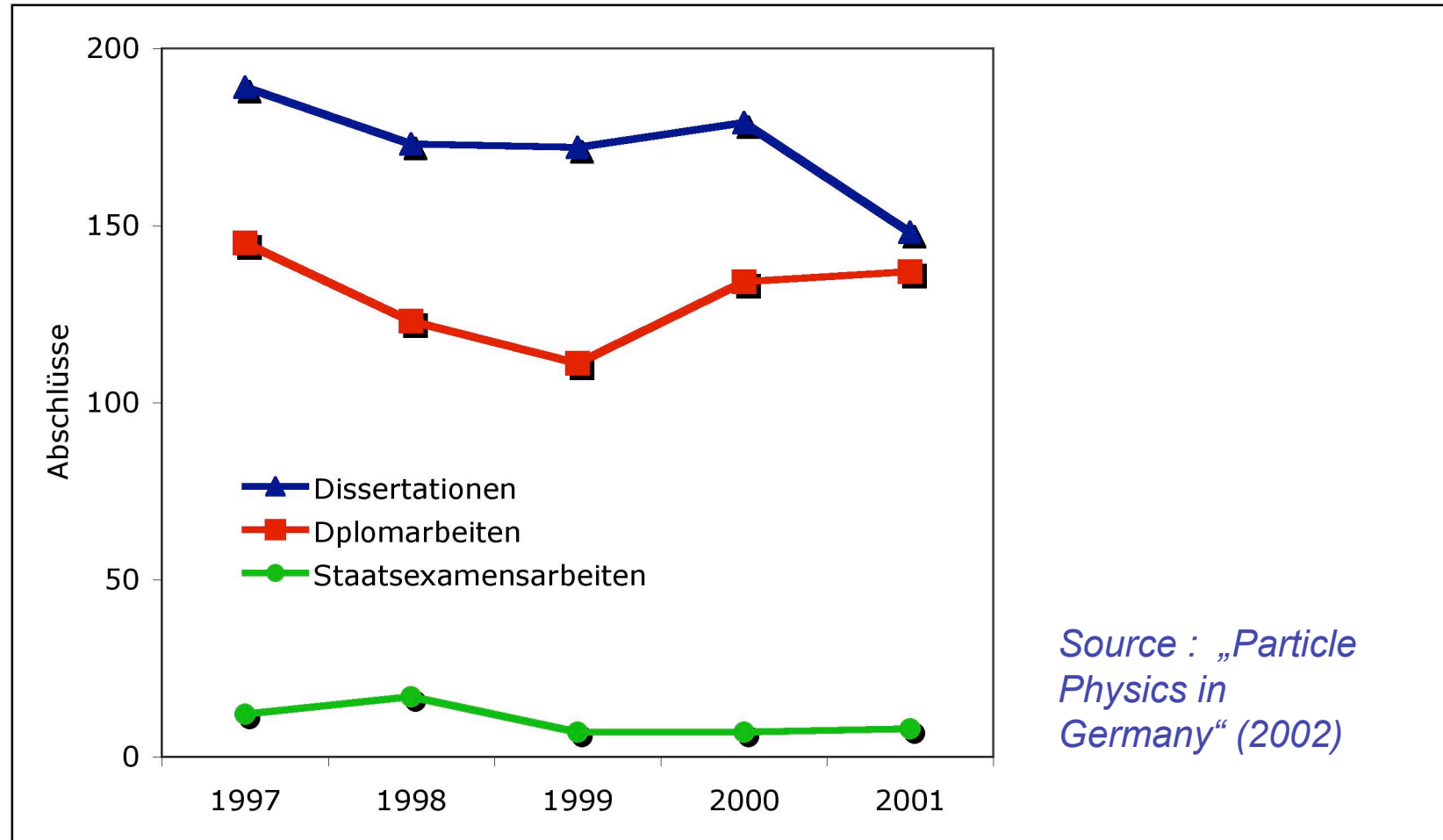
First Year Student Numbers in Physics (source : DPG)



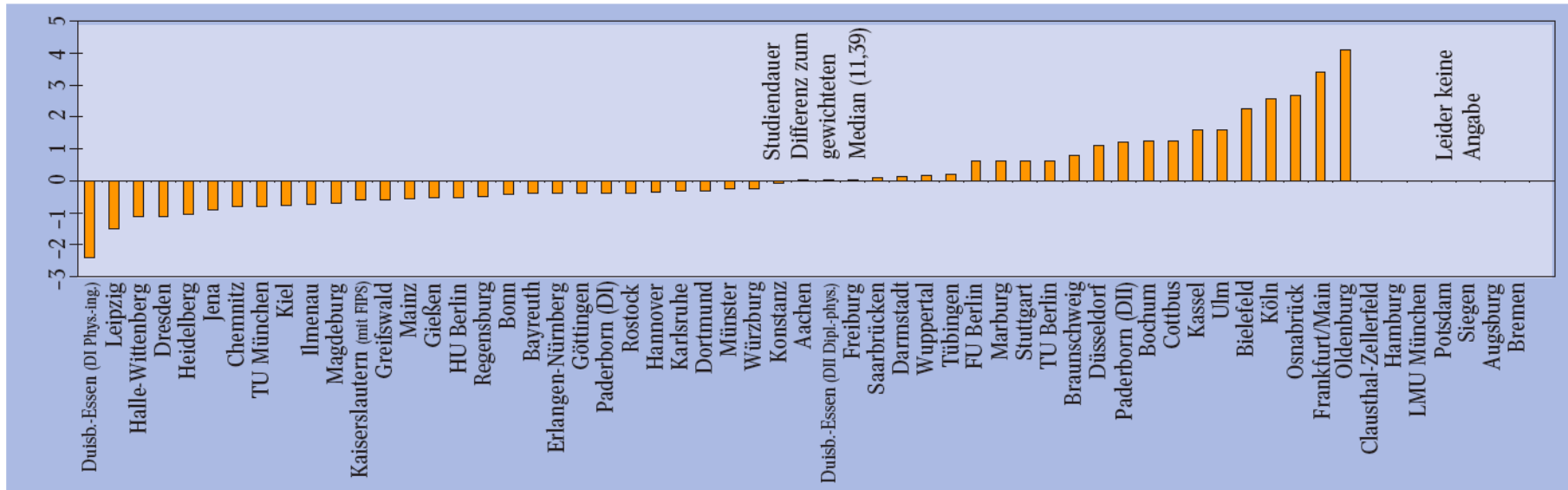
Exams, Ph.D.s in Physics - Knowing the Future (source : DPG)



Same Plot for HEP Students (only up to 2001)



Time to Exam 2004 - Averages for Diploma and Ph.D. (source : DPG)



Diploma in Physics : 5.7 years (including 12 months thesis) GOOD !

Ph.D. in Physics : 4.9 years (!)

but : typically better for HEP students
although no firm numbers available

New Development : Graduate Schools

Dedicated (obligatory) lecture programme for Ph.D. students

Typical example : *Particle Physics, Astrophysics and Cosmology*

Advantage : Look beyond daily work (important especially for experimentalists)

Disadvantage : Often incompatible with work at outside labs (testbeam, shifts, installation work)

Solution : Dedicated intense lecture week (e.g. twice per year)

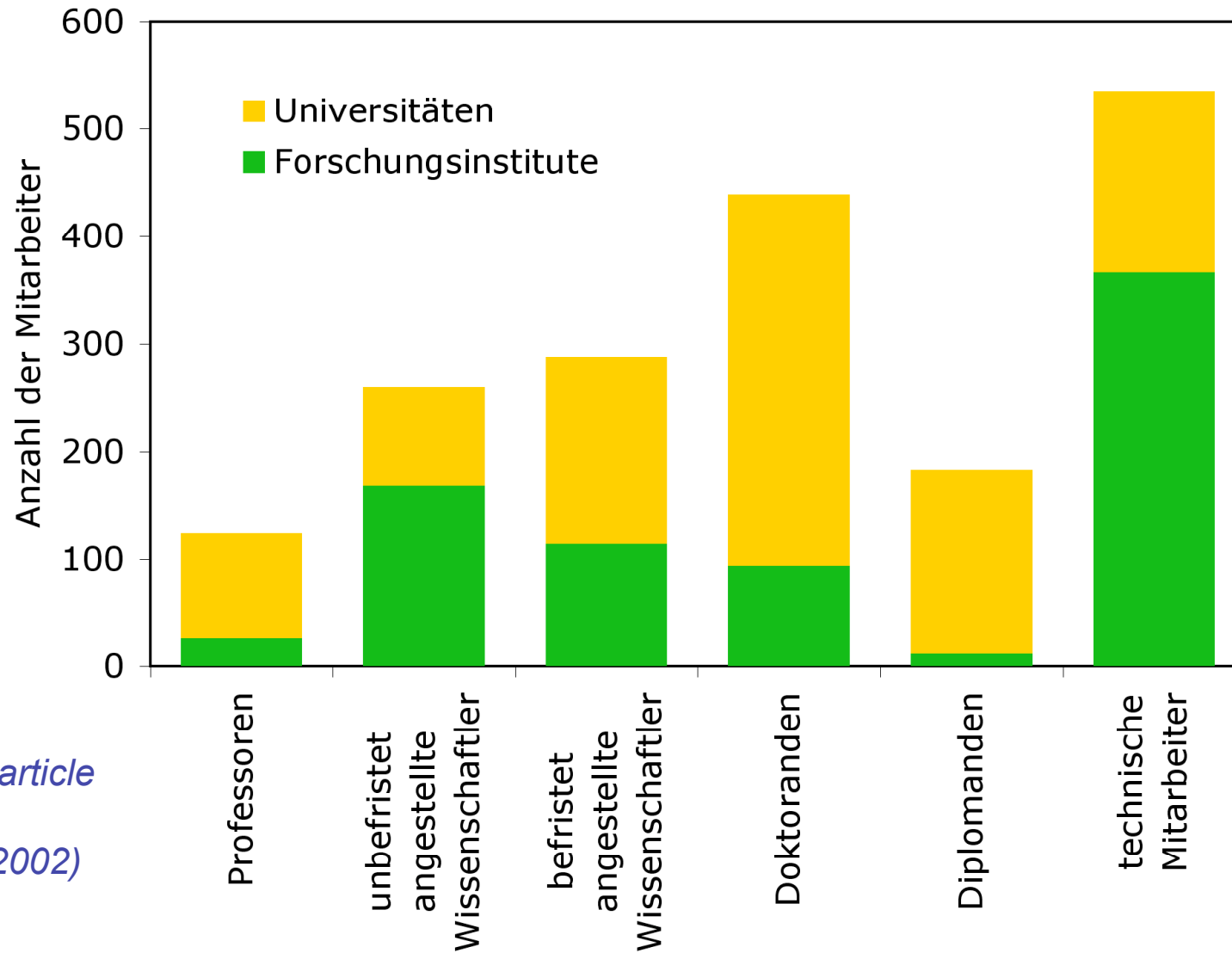
Structures : independent structure set-up by faculty

joint Max-Planck Research Schools

DFG (German Science Foundation) Graduate Schools

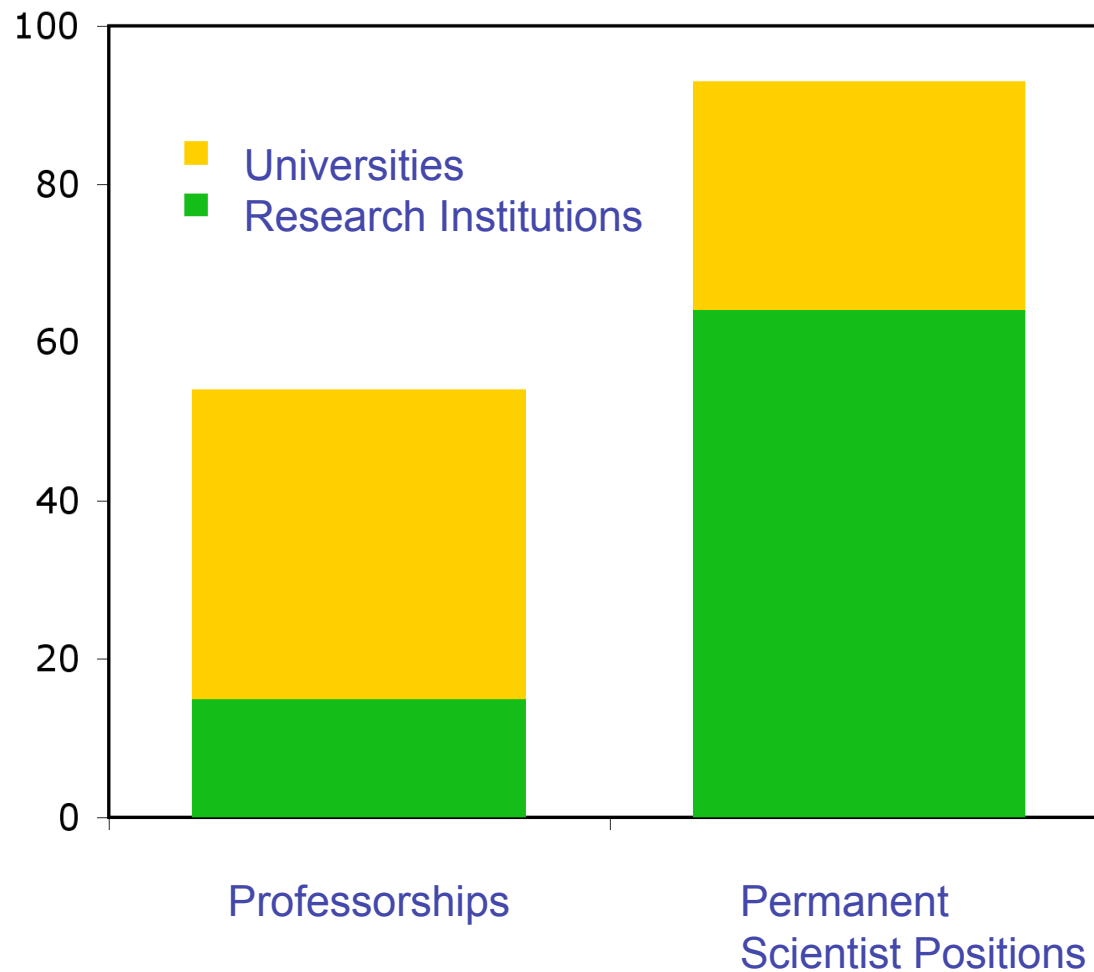
Will it lead to shorter Ph.D.s ? I guess it will

HEP Manpower Structure (2002)



Source : „Particle Physics in Germany“ (2002)

Expected permanent HEP positions 2002 - 2012 (not guaranteed)



About 15 /year

Remember :

About 150
Ph.D.s / year
(falling)

*Source : „Particle
Physics in
Germany“ (2002)*

Career Paths for young HEP Scientists

Traditional : Assistent + Habilitation

Not very successful : „Junior Professor“, ruled illegal by German Constitutional Court, no real career prospects, mass production problem

Suggested : Tenure Track „Junior Professor“ (possibility to get an „earmarked“ professorship)

Attractive : Research Group (own salary, Ph.D. positions, equipment)

offered by :

- DFG (Emmy Noether programme)
- Volkswagen Foundation
- Helmholtz Society
- Max-Planck Institutes
- Local Governments

Overview : The Federal Structure of Funding

Basic Personnel Infrastructure (Universities and Research Institutions except DESY and CERN)	est. 36 M€
Technical Infrastructure Universities	substantial
Federal Funding for HEP (personnel and investments)	13.03 M€

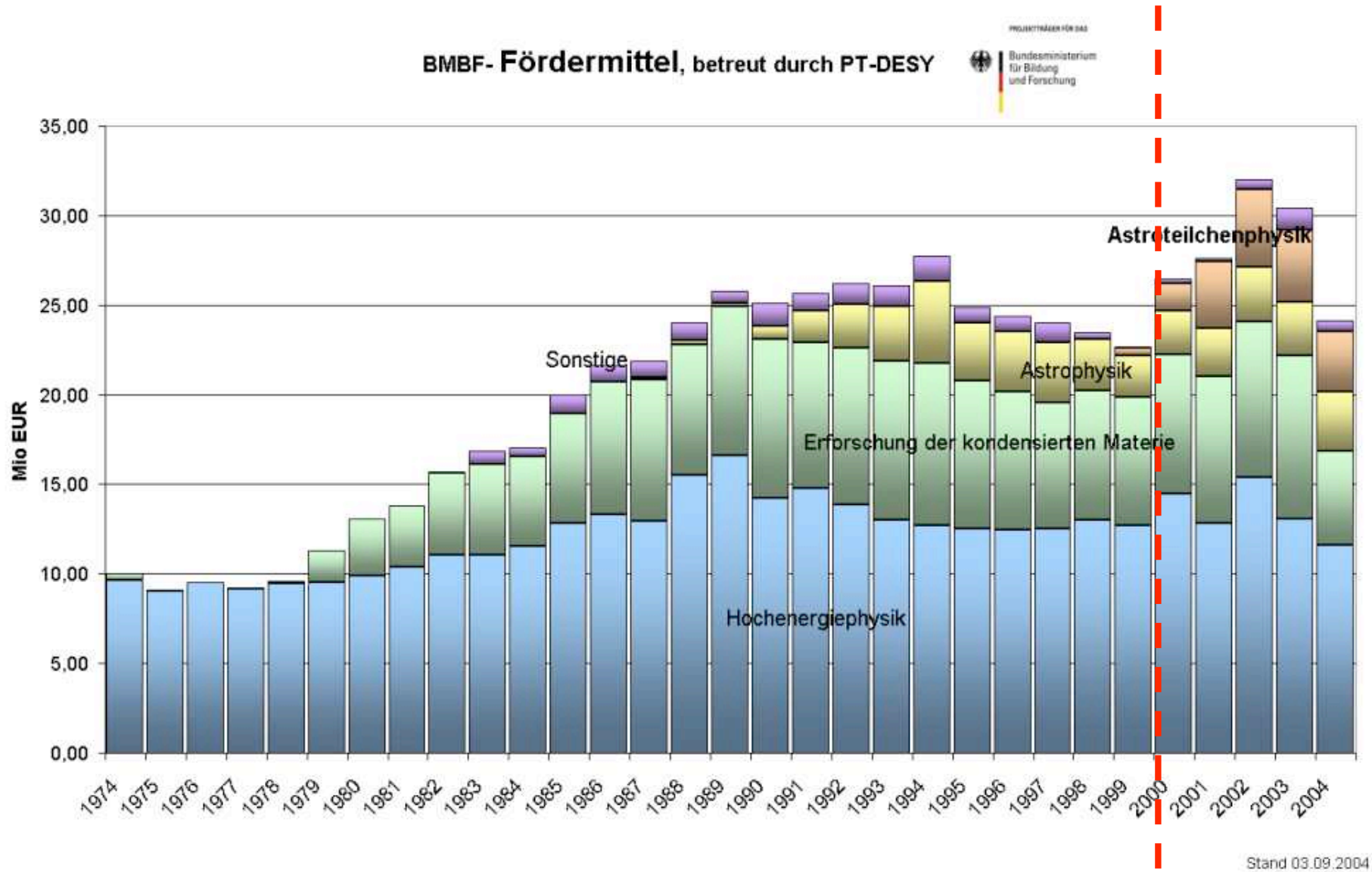
IN ADDITION

Graduate Schools (German Science Foundation and others)

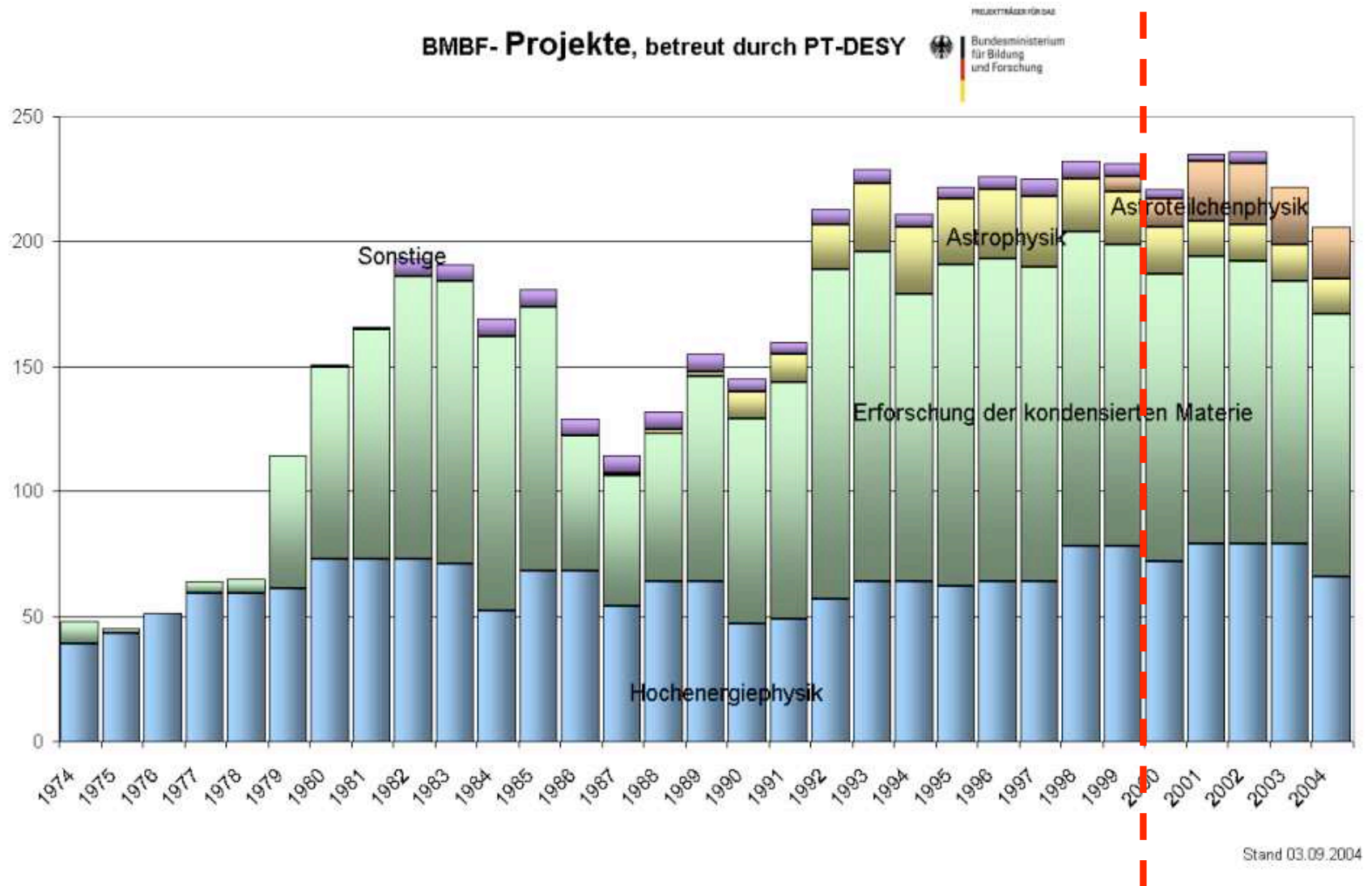
DESY Budget

CERN Contribution

Federal Funding for University Groups (Investments and Personnel)



Federal Funding for University Groups (Projects funded)



Organisational : Komitee für Elementarteilchenphysik (KET)

Founded 2001

Chair (until end 2004) : Reinhold Rückl (Würzburg)

6 representatives from regions, theory, CERN

Ex-officio members

Tasks : Contact advise to federal and regional politics

- Coordinate public appearance of HEP (e.g. HEP Report)

- Make recommendation on future developments (e.g. GridKA)

- Coordinate nominations for national and international boards and committees (e.g. ECFA)

- Organise annual HEP meeting

Look at <http://www.ketweb.de>

Summary and General Observations

- Enormous increase of (basic) science reputation (Science events like Saturday Morning Physics, Open Houses, CERN50 celebrations are packed)
- Massive influx of physics students
- Improvements in „time to exam“, Ph.D. programmes will hopefully allow for shorter Ph.D.s
- Reasonable system of career paths for young particle physicists
- Rather stable and reliable federal financing of HEP investments and personnel
- Somewhat unstable and largely unpredictable situation of university funding, substantial regional differences, lots of wildly fluctuating federal and regional plans (elite-universities and others)