

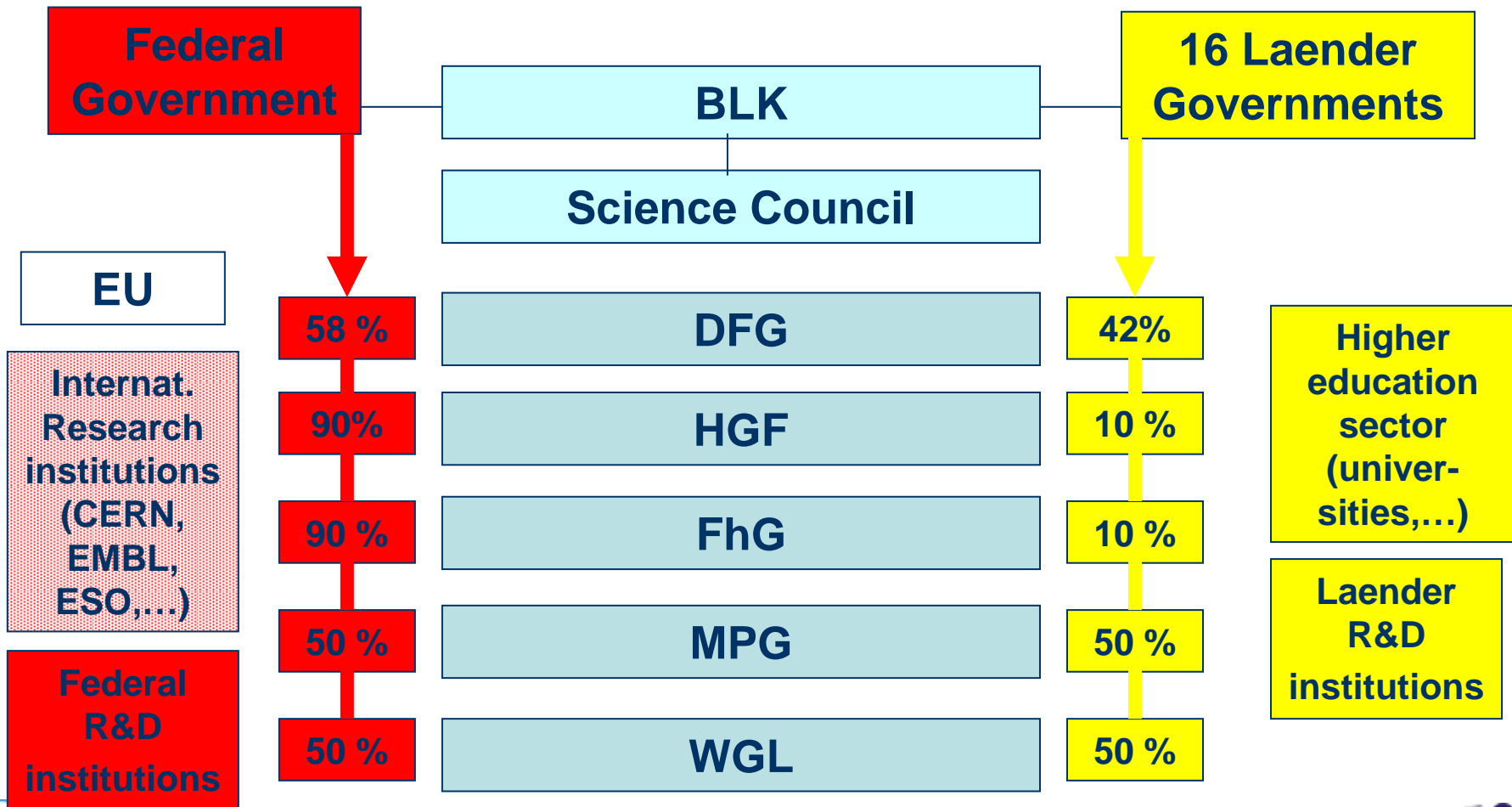


# BMBF - Project Funding

- Federal Structure and landscape of Funding in Germany
- Project Management Agency PT-DESY
- Funding of German CMS Groups

K. Ehret, PT-DESY  
FSP-102 CMS Meeting, Zeuthen, Sept. 28. 2007

## Federal Structure of Funding in Germany





## Funding of Basic Scientific Research in Germany

### Institutions

- Universities
- HGF
- MPG
- WGL
- International  
Institutions (e.g.  
CERN, ESO, ESRF,...)

### Project Funding

- DFG
- BMBF
- Federal State  
(Länder)
- Foundations



## Responsible for Education and Research are the 16 federal states ("Länder")

- Universities: Basis of scientific education and research - largest and most important body
- Universities funded by the "Länder" (in principle)
- exemptions: DFG, "Exzellenzinitiative", ... (third party funding - BMBF)



## DFG is the central, self-governing research funding organisation in Germany

- promotes basic research mainly at universities via projects, e.g.
  - Research Training Groups -Graduiertenkollegs
  - Collaborative Research Centres -Sonderforschungsbereiche
  - Excellence Initiative - Exzellenzinitiative
- budget 60:40 (federal government - Länder)
- funds are distributed according demand (more proposals lead to larger volume)
- HEP: funding of basic theory research





## Scientific organisation comprised of 84 non-university research institutes, e.g.

- Deutsches Museum Munich
- BESSY (will join HGF)
- IFM-Geomar (Marine Science) Kiel
- TIB: National Library of Science and Technology, Hannover (collect summary reports of project funding)
- AIP: Astrophysical Institute Potsdam  
-> no direct support for particle physics





## Organisation for applied research

- 56 Institutes in Germany e.g.
  - IZM Berlin - bump bonding ATLAS pixel detector
  - ITWM Kaiserslautern - support structure for Si-detectors
- > support and collaboration for technology development (esp. LHC experiments)





## MPG is the research organisation for basic research outside the universities

- natural sciences, life sciences and the humanities
- self defined core themes, take up new and innovative research areas (beyond scope or capability of universities)
- 80 research institutes, funded 50:50
- particle physics: MPI of Physics, Munich and  
MPI for Nuclear Physics, Heidelberg







## Helmholtz Association is the largest German research institution (outside universities)

- long term research goals, e.g. to build and operate large scale facilities as a service for external users
- 2,3 billion € annual budget, 90% by federal ministry
- 15 research centres
  - DESY (Hamburg: HERA, PETRA, FLASH, XFEL, TIER2, NAF)
  - FZK (Karlsruhe: LHC TIER1, KATRIN, ...)
  - FZJ (Jülich: High Performance Computing - Theory)
  - GSI (Darmstadt: TIER2, FAIR)





## BMBF Funding of Basic Research

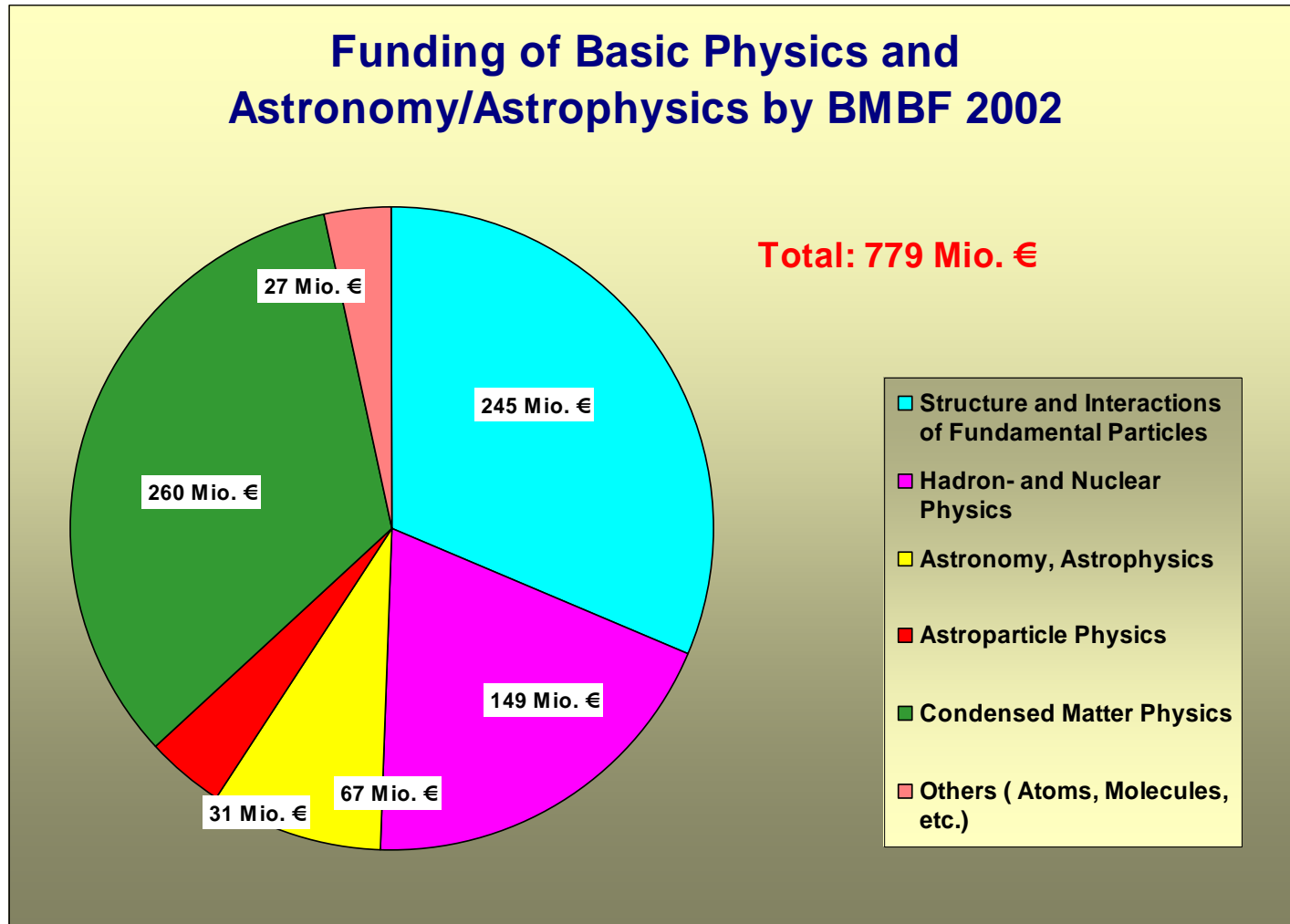
# BMBF activity in basic research around research infrastructures / large-scale facilities (federal interest)

- need for international coordination or separate budget
- international institutions, e.g. CERN: 200 MSFr / year
- strategy building with scientific communities (ESFRI, FALC, CERN Council, ...)
- Project Funding - Verbundforschung



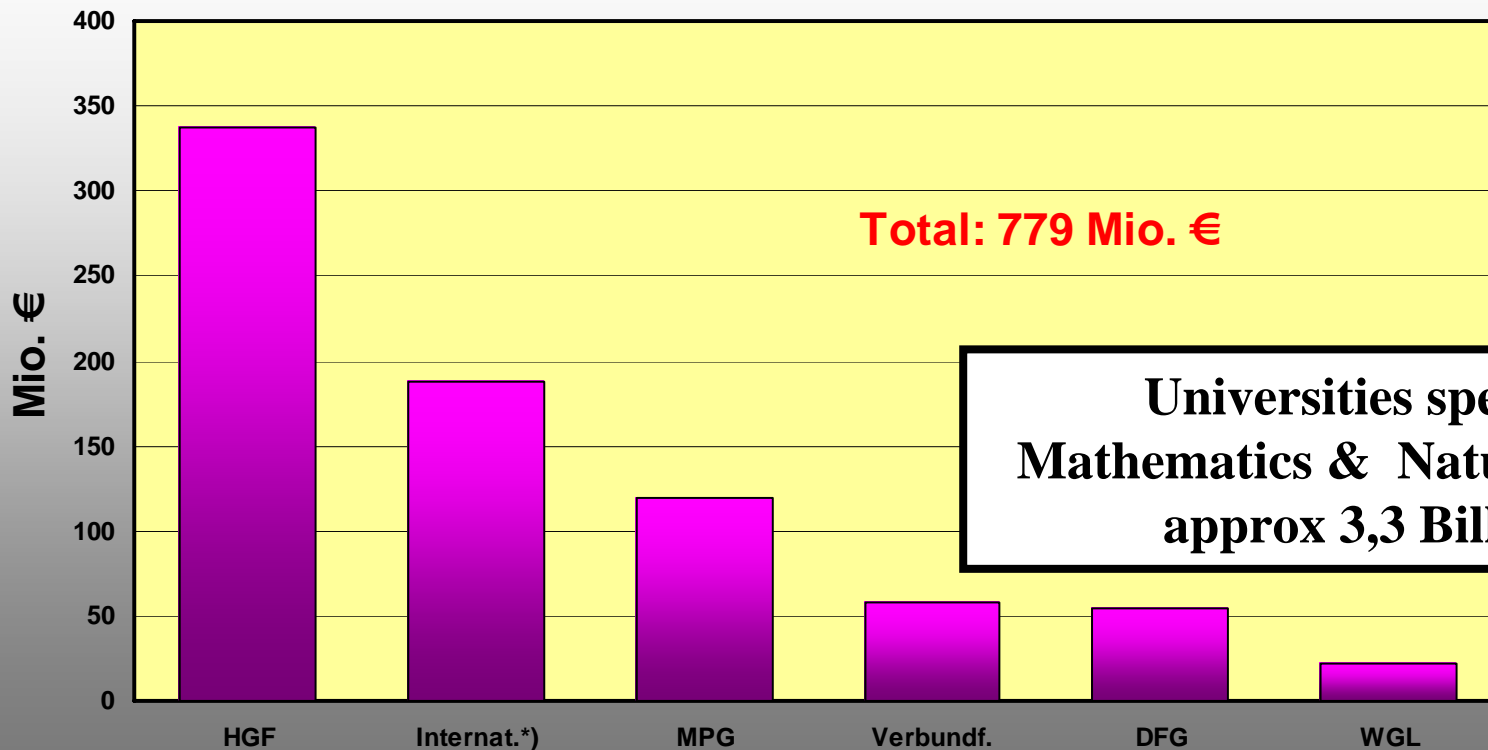
## BMBF Funding of Basic Research

### Funding of Basic Physics and Astronomy/Astrophysics by BMBF 2002



## BMBF Funding of Basic Research

### Funding of Basic Physics and Astrophysics by BMBF 2002



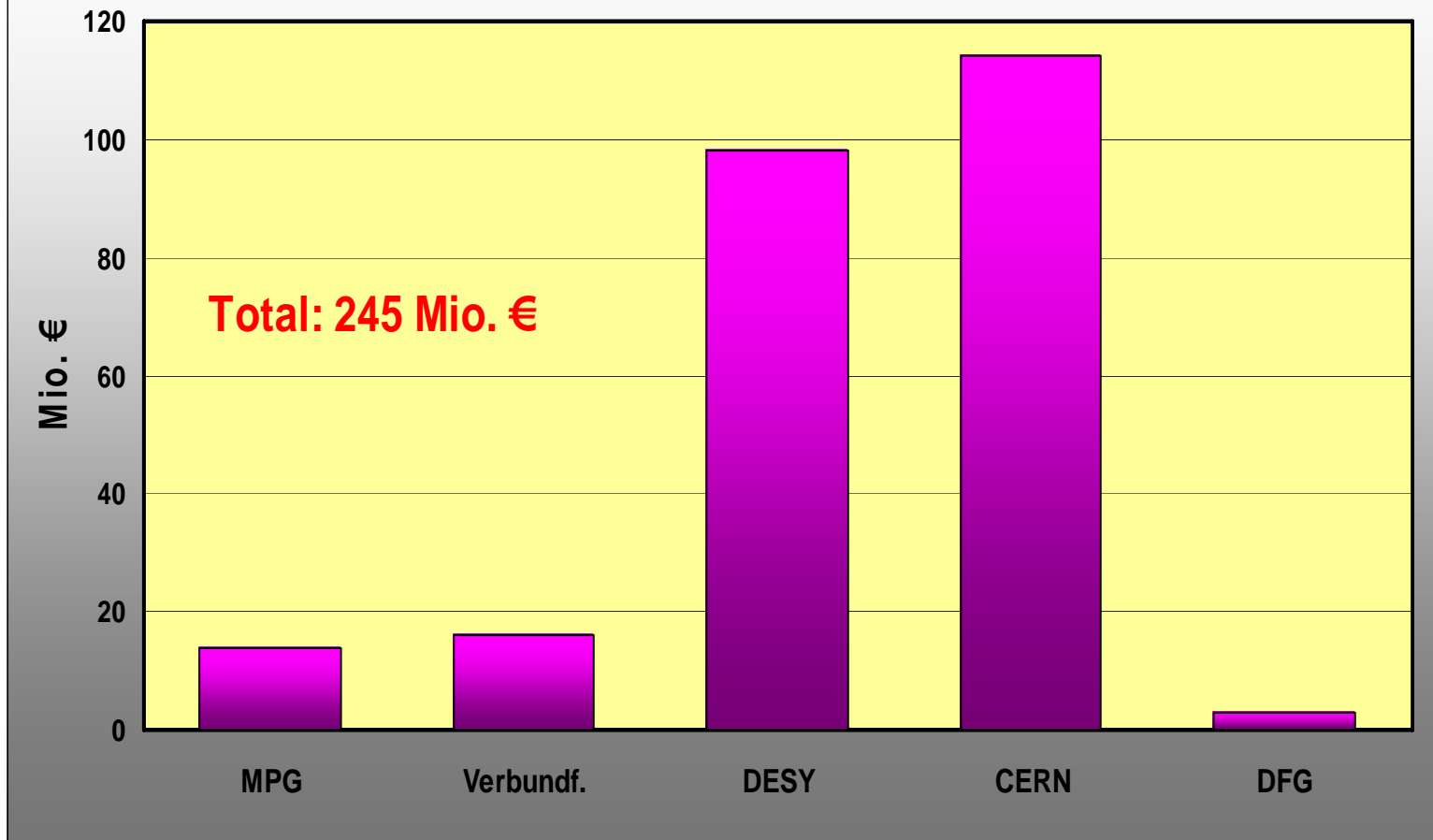
Total: 779 Mio. €

Universities spent for  
Mathematics & Natural Science  
approx 3,3 Billion €

\*) CERN / ILL / ESRF / ESO



## Structure and Interactions of Fundamental Particles Funded by BMBF 2002





## BMBF Project Funding of Basic Research

# Requirements / Boundary Conditions / Goals

- Major Federal Interest
- Complementary to DFG Funding
- Mainly dedicated to German Universities
- Priority for collaborations / networks
- Scientific excellence
- Funds for technical developments and scientific instrumentations
- Enable and ensure proper use of research infrastructures





## Project Management Agency for the BMBF

- assigned by the BMBF, funding agency in the name of the BMBF
- PT-DESY is a DESY group, located at DESY in Hamburg
- Project Funding: Particle Physics, Astro- and Astroparticle Physics, Condensed Matter Research
- approx. 30 Mill Euro / year
- other activities of PT-DESY
  - two ERANET: ASPERA, ASTRONET
  - internet presentation: Welt der Physik (DPG and BMBF)
  - support of BMBF: e.g. European strategy ESFRI, international negotiations XFEL, FAIR



## Project Funding in High Energy Physics

### Long Tradition (since the 1970th) to support esp. university groups in the field of High Energy Physics

- focus on experimental groups in collaborations at experiments located at DESY and CERN (institutions funded by federal ministry)
- to enable their participation (i.e. effective use of large scale research infrastructure)
  - > common in HEP,
  - > HEP is the prime example for federal project funding
- usually 3 year funding period (7/06 - 6/09)
- evaluation board (chair Thomas Müller), peer review system
- budget: approx. 12,5 M€ / year







## Scientific Goals and Priorities of Last Call - Sep 05 (subtotal)

### Scientific Questions

- mass generation mechanism
- unification of forces, gravitation
- dark matter, dark energy
- extra dimension
- proton structure
- particle production & fragmentation - theory model
- heavy quarks, CKM parameter
- physics beyond SM
- neutrino oscillation & mass

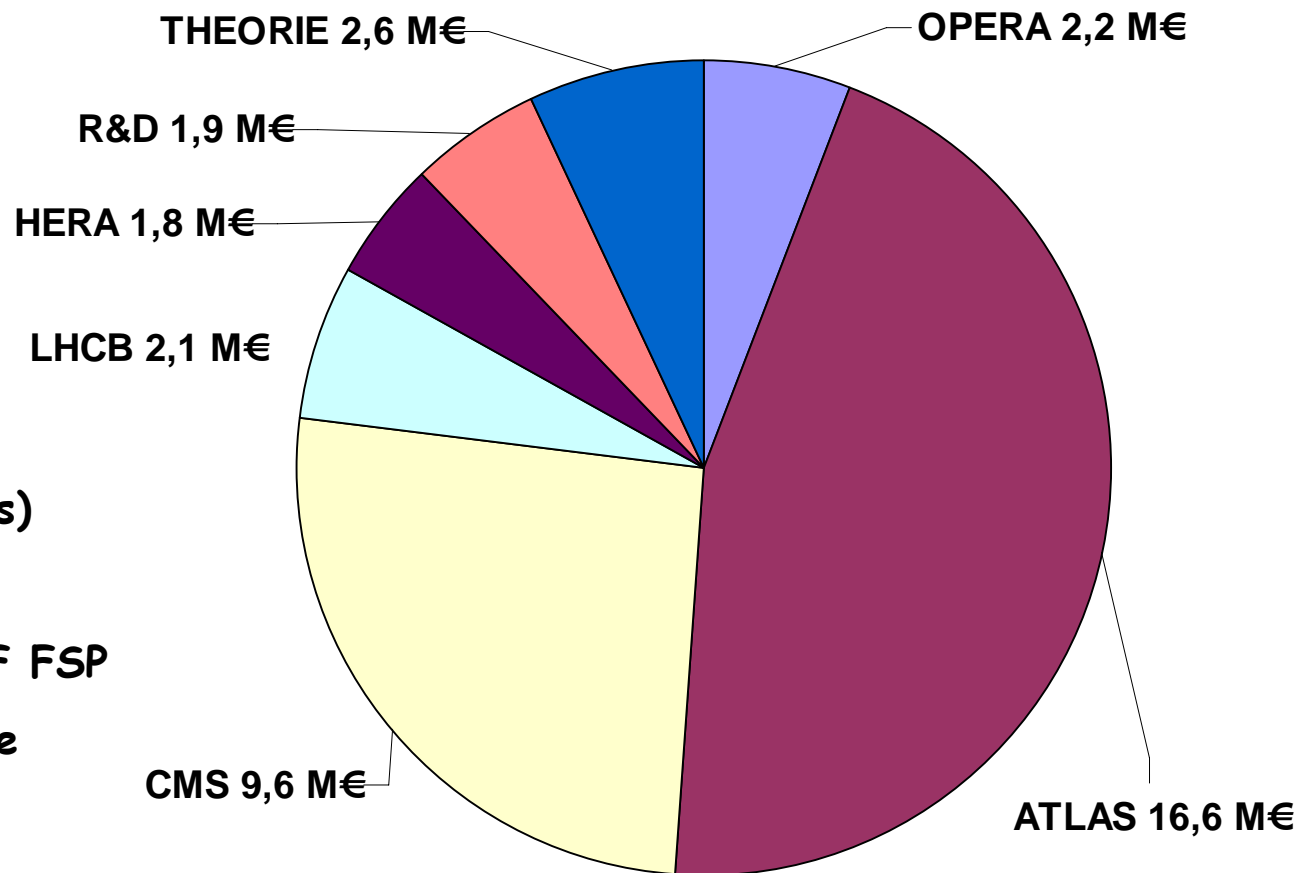
### Supported Activities

- H1 & ZEUS @ HERA
- SPS: NA48
- CNGS
- ATLAS, CMS & LHCb
- Grid
- Tevatron
- R&D: detector, accelerator
- development: analyses strategies, Grid computing

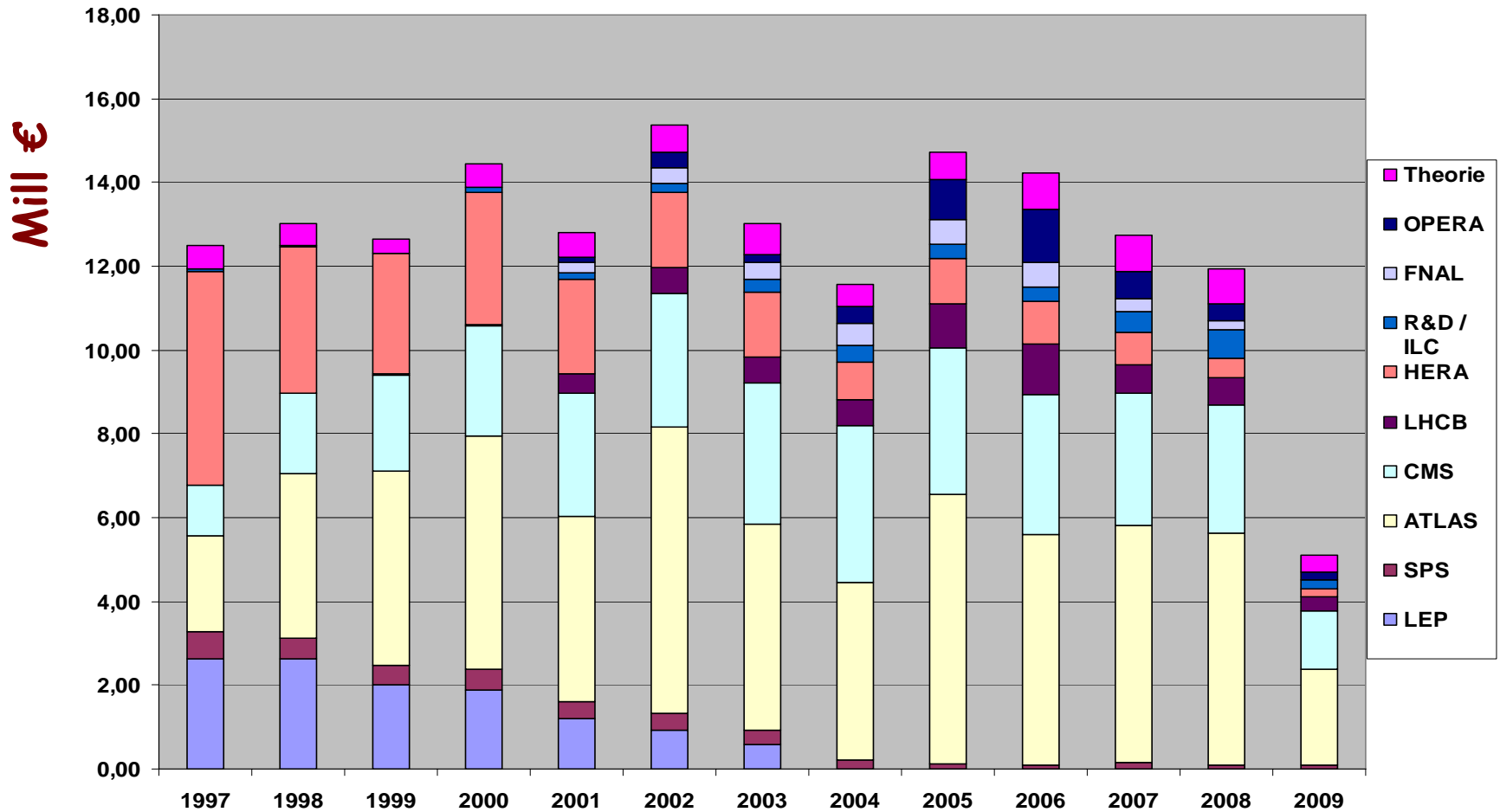


## Funding Period 07/06 - 06/09

- 52 new projects
- approx. 37 Mill. €
- budget for approx.  
4700 months (scientists)
- 130 PhD positions
- new funding tool: BMBF FSP  
Forschungsschwerpunkte



## HEP Funding last 10 years





## Forschungsschwerpunkte FSP

### Constitution of first BMBF Forschungsschwerpunkte FSP

- newly introduced instrument / tool to support basic research and provide sustainable support
- support of nationwide excellent research network
- working at large scale infrastructure (with long term BMBF commitment)
- aim: improve coordination and cooperation, combined usage of resources -> positive synergy effect, nationwide collaboration
- LHC groups are also here prime example
- considered as important measure at the transition from the construction phase to the running and physics period of the LHC experiments
- German CMS groups: FSP-102 - speaker Thomas Hebbeker

Meeting like this one here in Zeuthen are important - first success





# CERN User Initiative: initiated by State Secretary after CERN visit

- additional money requested within federal government budget
- budget panel discussion completed next week
- considerations and preparation for a call
- boundary conditions settled until annual KET meeting in November
- increase and improve German participation





## Preparation of Next Funding Period 7/2009 - 6 / 2012

# First Non Official Schedule - Common

- strategy discussion next spring / summer
- official call for proposals: issued autumn 2008
- deadline for applications: end of 2008
- evaluation and recommendation (evaluation board - GA)
- funding decision together with BMBF
- letter of approval - spring 2009
- start of new funding period: July 2009



# German Contributions to CMS Construction

- Long-term Commitment of the BMBF
- Construction MoU signed by BMBF (underlines the outstanding importance of the project)
- supporting / commitment letters from Universities (KA, RWTH)
- MoU Core values: 17 MCHF (450 MCHF); finally 22,5 MCH - Lumi:  
Common Fund 5,5 MCHF, (Si-)Tracker 9 MCHF, Muon Chambers 6,2 MCHF
- MoU for M&O - signed by BMBF (unusual): >300 T€/year
- total project funding for DCMS up to 2007: > 32 M€



# Concluding Remarks

- Federal funding is important, but it just provide the frame and hopefully good working conditions
- constitution of D-CMS FSP-102 measure to supports and strengthens the German CMS groups
- Meetings like this are therefore very important
- real work, science, new discoveries - that's your task

## Good Luck

