Joint ECFA-EPS Session Manchester 2007

Plenary ECFA

Saturday 21 July 2007
from **14:00** to **18:00**
at **Manchester - EPS (*Whitworth Hall*)**
chaired by:
Karlheinz Meier (Kirchhoff-Institut fur Physik (KIP))

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What is ECFA (European Committee for Future Accelerators) ?

ECFA members are High Energy Physics (HEP) scientists delegated by their respective national communities and, ex officio, the directors of the major European laboratories engaged in HEP. **The national members provide continuous feedback between ECFA and the scientific and structural developments in their countries. Regular visits to CERN member state countries follow the development of national human and financial resources and express the importance of coordinated HEP activities to the national policy-makers and funding agencies.**

The role of ECFA is to actively facilitate future developments in accelerator-based HEP in Europe and the integration of European HEP into the international landscape. Working groups set up or endorsed by ECFA explore future accelerator-based HEP projects. In this context ECFA builds on successful work in the past where it has been instrumental in preparing the physics cases for major projects like LEP, HERA and the LHC. The role of **an incubator for new ideas** is the principal task of ECFA. It is currently pursued in the context of the ILC, CLIC and future neutrino facilities.

Source : Draft of CERN Strategy Green Paper

Selected Events in 2007 affecting the future of European Particle Physics

February : Presentation of the Reference Design Report (RDR) and first Cost Estimate for the ILC by Barry Barish (Director GDE)

June : CERN Council supports additional funding for CERN (240 MCHF for the next 4 years)

June : HERA at DESY closed down after 17 years of successful operation

Country Visits (Czech Republik, UK, Germany in 2007)

- All CERN Memberstates (+ Observers), visits approximately once every 7 years

  Scientific Programme

  Structure and Financial Situation

  Personnel / Post-Doc / Student Situation

  Education / Outreach

- Concluding Letter to Ministries
- Midterm-Reports to ECFA after 3-4 years

ECFA 2006 Survey on Particle Physics in Europe

Researchers in experimental elementary particle physics

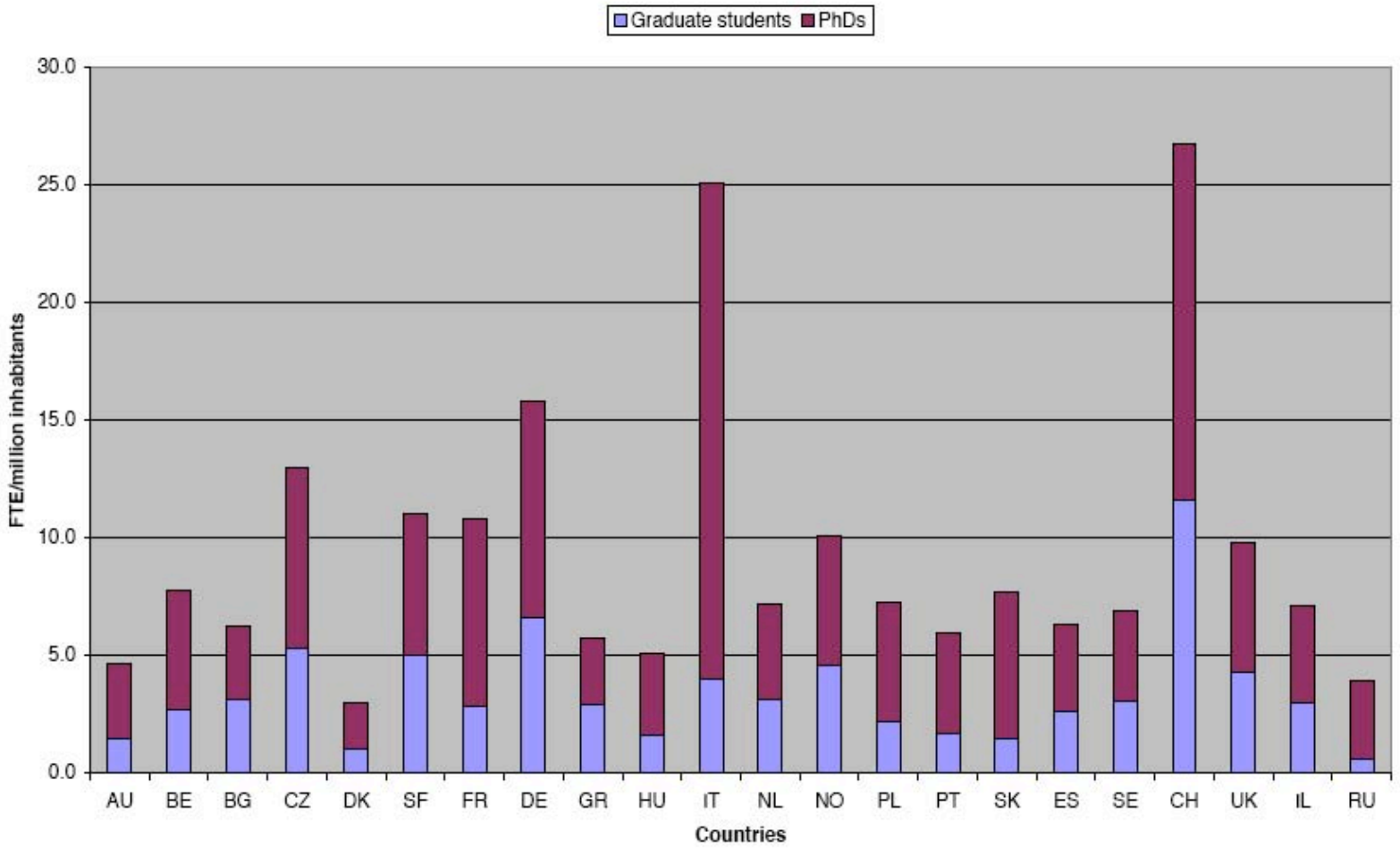
Total number: 4 022 FTE
Normalized to population: 8.7 FTE/million inhabitants
Normalized to GDP: 0.39 FTE/G€

Graduate students in experimental elementary particle physics

Total number: 1 807 FTE
Normalized to population: 3.9 FTE/million inhabitants
Normalized to GDP: 0.18 FTE/G€

ECFA/RC/06/342/Rev.2
24 August 2006

Researchers and graduate students normalized with the population of the countries



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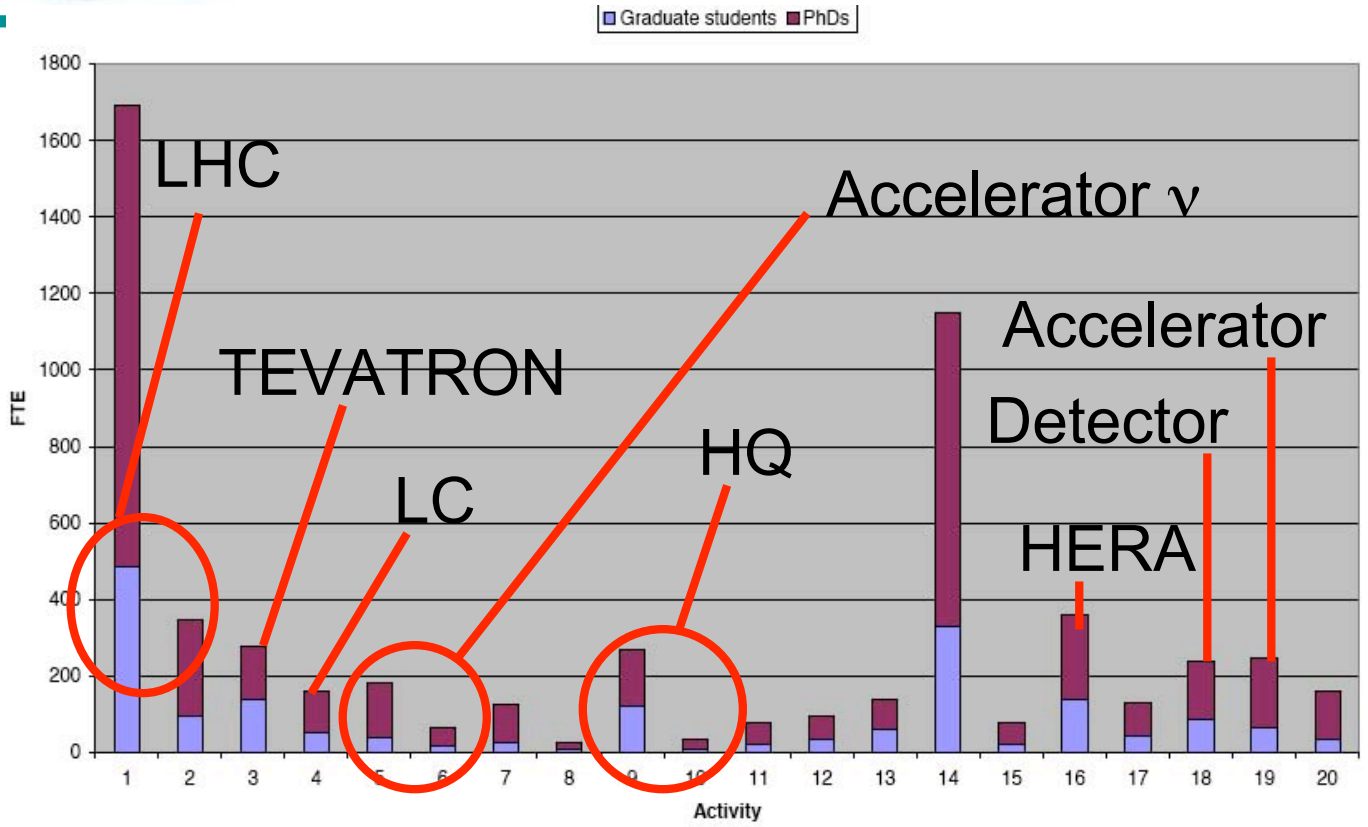


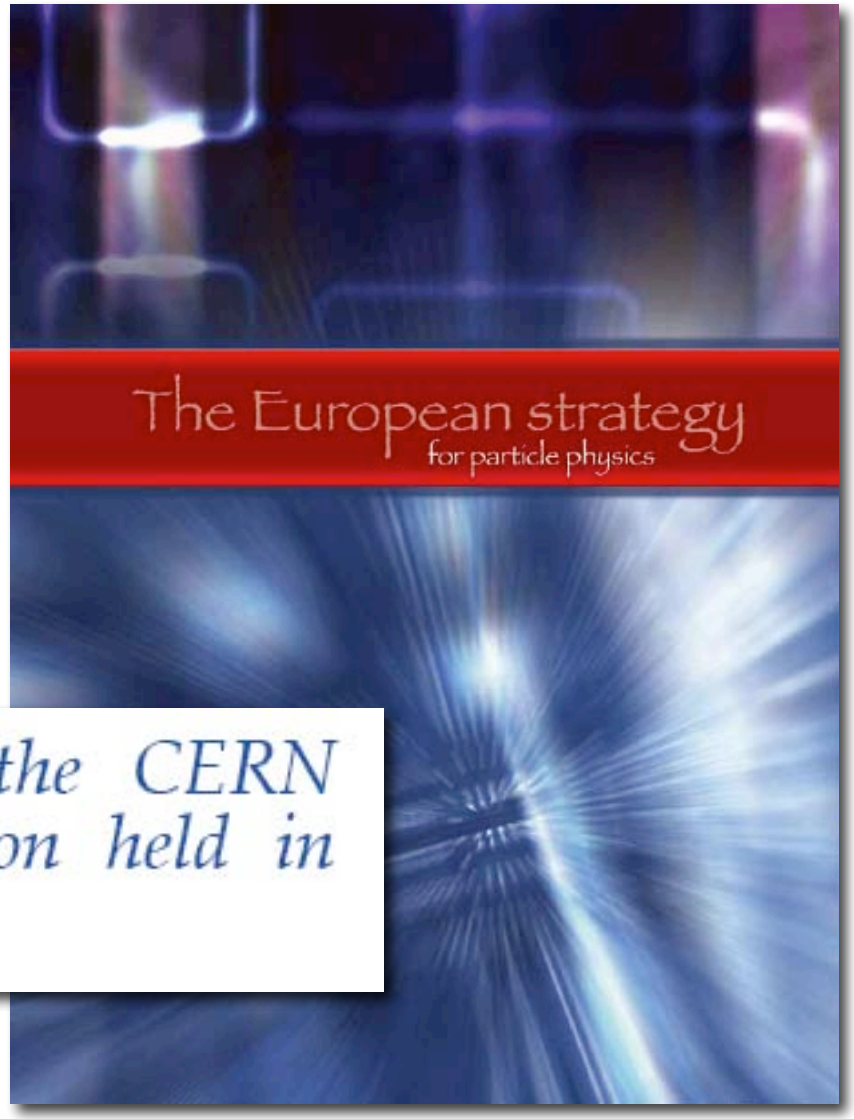
Label	1	2	3	4	5	6	7	8	9	10
Area	LHC: ATLAS, CMS and LHCb	LHC: ALICE	Ongoing Tevatron experiments	Preparations for a linear collider	Ongoing accelerator neutrino programmes	Preparing for future accelerator neutrino programmes	Ongoing non-accelerator based neutrino programmes	Preparing for future non-accelerator based neutrino programmes	Ongoing b-, quarkonium-factories	Next generation b-, quarkonium-factories
Label	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Area	Double beta decay & electron neutrino mass	Future precision measurements of particle properties (e.g. EDM, g-2,)	Ongoing heavy ion physics	Astroparticle physics	Observational cosmology	HERA	Spectroscopy, muon/neutrino DIS (COMPASS...)	Detector R&D	Accelerator R&D	Others

ECFA/RC/06/342/Rev.2
24 August 2006

CERN Council Strategy Group

Chaired by
Ken Peach (SPC)
Torsten Akesson (ECFA)

Identified 17 strategic points for European Particle Physics



Unanimously approved by the CERN Council at the special Session held in Lisbon on 14 July 2006

Today :

- Go through 6 (out of 17 total) strategic points layed down in the strategy paper
- Review status and recent developments (mostly from experimental side)
- Discuss progress in panel discussion (with contributions from audience

The LHC will be the energy frontier machine for the foreseeable future, maintaining European leadership in the field; *the highest priority is to fully exploit the physics potential of the LHC, resources for completion of the initial programme have to be secured such that machine and experiments can operate optimally at their design performance.* A subsequent major luminosity upgrade (SLHC), motivated by physics results and operation experience, will be enabled by focussed R&D; *to this end, R&D for machine and detectors has to be vigorously pursued now and centrally organized towards a luminosity upgrade by around 2015.*

Todays Talk : Stefan Tapprogge

In order to be in the position to push the energy and luminosity frontier even further it is vital to strengthen the advanced accelerator R&D programme; *a coordinated programme should be intensified, to develop the CLIC technology and high performance magnets for future accelerators, and to play a significant role in the study and development of a high-intensity neutrino facility.*

Todays Talk : Sami Tantawi

It is fundamental to complement the results of the LHC with measurements at a linear collider. In the energy range of 0.5 to 1 TeV, the ILC, based on superconducting technology, will provide a unique scientific opportunity at the precision frontier; *there should be a strong well-coordinated European activity, including CERN, through the Global Design Effort, for its design and technical preparation towards the construction decision, to be ready for a new assessment by Council around 2010.*

Todays Talk : Brian Foster

Studies of the scientific case for future neutrino facilities and the R&D into associated technologies are required to be in a position to define the optimal neutrino programme based on the information available in around 2012; *Council will play an active role in promoting a coordinated European participation in a global neutrino programme.*

Todays Talk : Alain Blondel

Flavour physics and precision measurements at the high-luminosity frontier at lower energies complement our understanding of particle physics and allow for a more accurate interpretation of the results at the high-energy frontier; *these should be led by national or regional collaborations, and the participation of European laboratories and institutes should be promoted.*

Todays Talk : Marcello A. Giorgi

Suggested Q+A Areas for Discussion Session

- Physics (Complementarity, missing Pieces)
- Dependencies - Relations (Physics, Machine, Timescales)
- International Situation
- Size and Strength of Communities
- Financial Volumes, Competition for Funding

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