CHIPP
and
Swiss Particle Physics

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Laboratory for High Energy Physics
Institute of Physics, EPFL

(Please have a look at November 2013, O.Steinkamp's midterm report)

Brief History

1988 The Forum of Swiss High Energy Physicists

2002 RECFA CH visit to the University of Zurich

RECFA CH visit 2002

ORGANISATION EUROPÉENNE POUR LA RECHERCHE NUCLÉAIRE
CERN EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

Open session - Switzerland
Zürich, Switzerland (Room 16G15, Bldg 36) Friday, 1 March 2002 - 09:00

Friday, 1 March 2002 Documents

1. Welcome to University of Zürich (Prof. H. Weder, rector of the University)
2. Address to ECFA (Dr C. Kleiber, Secretary for State for Education and Science)
3. Overview of Particle Physics in Switzerland (C. Amsler)

--- 9.50: COFFEE ---

4. Activities at the CERN LHC

4.1 CMS (F. Pauss)

4.2 ATLAS (K. Preztl)

4.3 LHCb (U. Straumann) Slides

4.4 LHC Computing (C. Grab) Slides

5. Ongoing Activities at DESY H1 at DESY (K. Mueller)
6. Activities at PSI (R. Eichler)
7. Other Ongoing Accelerator-based Activities

7.1 Other CERN activities (L. Tauscher) Slides

7.2 Fermilab activities (CDF) (X.Wu)

7.3 BNL activities (P. Truol)

7.4 KEK activities (A. Bay) Slides

--- 12.45: LUNCH ---

8. The AMS experiment (M. Pohl) Slides
9. Neutrino Physics activities in Switzerland

9.1 The OPERA experiment at Gran Sasso (M. Weber) Slides

9.2 The ICARUS programme (A. Rubbia) Slides

9.3 High-intensity neutrino sources (A. Blondel) Slides

9.4 Double-β decay and reactor experiments (J-L Vuilleumier)

10. Dark matter searches (F. Hasenbalg)
11. Theoretical Particle and Astroparticle Physics in Switzerland (Z. Kunszt)

--- 15.40: COFFEE ---

12. Medical Applications involving Particle Physics techniques in Switzerland (Ch. Morel)
13. Education Activities in Switzerland (C. Joseph)
14. Student Viewpoint (A. Glauser) Slides
15. Concluding remarks (A. Clark)

One of the RECFA comments

RECFA letter to State Secretary in 2002

In its conclusions on the above-mentioned discussion, the Committee felt that the Swiss community could benefit from a somewhat more open internal debate on the scientific programme. For example, an open discussion of current and future national scientific projects in a forum such as a scientific council for experimental particle physics and particle astrophysics might be helpful in developing a long-term strategy, provided that this is done correctly and with full respect for the independence of the Swiss universities.

⇒ Formation of Swiss Institute of Particle Physics: a virtual institute

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RECFA CH Visit

ORGANISATION EUROPÉENNE POUR LA RECHERCHE NUCLÉAIRE
CERN EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

Open session - EPFL Switzerland
EPFL, Lausanne (BSP (Cubotron-UNIL) room 231) Friday, 6 March 2009 - 09:30

Description:
Open session of R-ECFA meeting in Switzerland, 6 March 2009

Friday, 6 March 2009 Documents

09:30 1.	Opening (T. Nakada, EPFL)	
09:35 2.	Welcome (B. Deveaud-Pledran, Dean of Research, EPFL)	Slides
09:45 3.	Swiss Particle Physics Support (M. Dell'Ambrogio, State Secretary for Research and Education)	
10:05 4.	CHIPP and Swiss Particle Physics (U. Straumann, CHPP EB Chair, Zürich)	Slides
10:35 5.	Swiss experiments at high energy frontier (O. Schneider, EPFL)	Slides
	--- coffee break (25 minutes) ---	
11:30 6.	Swiss experiments at neutrino frontier (A. Ereditato, Bern)	Slides
12:00 7.	Swiss astroparticle experiments (T.J.L. Courvoisier, Geneva)	Slides
	--- lunch (1 hour) ---	
13:30 8.	Swiss theory activities (G. Colangelo, Bern)	Slides
14:00 9.	PSI and accelerator research (L. Rivkin, PSI/EPFL)	Slides
14:30 10.	R&D and technnology transfer (tbc)	Slides
	--- coffee break (25 minutes) ---	
15:25 11.	Higher education (M. Pohl, Geneva)	Slides
15:45 12.	Outreach (G. Dissertori, CHIPP Outreach Coordinator, ETHZ)	Slides
16:05 13.	CH GRID activities (C. Grab, ETHZ)	Slides
16:25 14.	PhD student point of view (Angela Buechler, Zürich)	Slides
	--- Closed session till 17:15 ---	
17:30 15.	Feedback to the Swiss Community	

Scientific talks on thematic subjects

2009 RECFA recommendations

- Science programme …

For the future the Committee recommends to keep this scientific breadth but to make sure Switzerland remains to be involved … in the future efforts defined in the European Strategy for Particle Physics. … an increased support (*in accelerator*) in the Swiss universities, including additional Chairs in accelerator physics should be considered. …Also here (*theory*) the academic support needs to be maintained and even strengthened in particular in particle physics phenomenology.

2009 RECFA recommendations

- Structure …

ECFA recommends that CHIPP also coordinates developing areas like astroparticle physics and neutrino physics in addition to the well established accelerator based particle physics.

…

It (*PSI*) should remain well connected to the other particle physics activities for example by continuing to offer unique facilities for precision measurements, exploiting its competence in accelerator physic and detector instrumentation to support the university groups.

2009 RECFA recommendations

- Funding …

The FORCE programme is an excellent example for an innovative funding approach and a similar approach should be considered in the future to support forward looking projects which will ensure Switzerland leading position in t he field.

2009 RECFA recommendations

- Education …

I t should be made sure that the beautiful concepts of basic science and instrumentation in particle physics are taught at all higher education institutes in the country, even at those without active particle physics research groups.

2009 RECFA recommendations

- Outreach …

ECFA recommends that this activity is strengthened by providing more financial support.

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2011 CHIPP registered as non-profit Association, i.e. juridical person

2011 CHIPP became a member of Swiss Academy of Science (SCNAT)

CHIPP Goal

The purpose of the CHIPP Association is to strengthen particle, astroparticle and nuclear physics in Switzerland by being active in particular in the following fields

a) To help towards a successful participation of Swiss groups in projects

b) To advise the Universities/ETHs on vacant professorships and academic strategies, and coordinate teaching activities

c) To ensure a proper Swiss representation in relevant national and international bodies

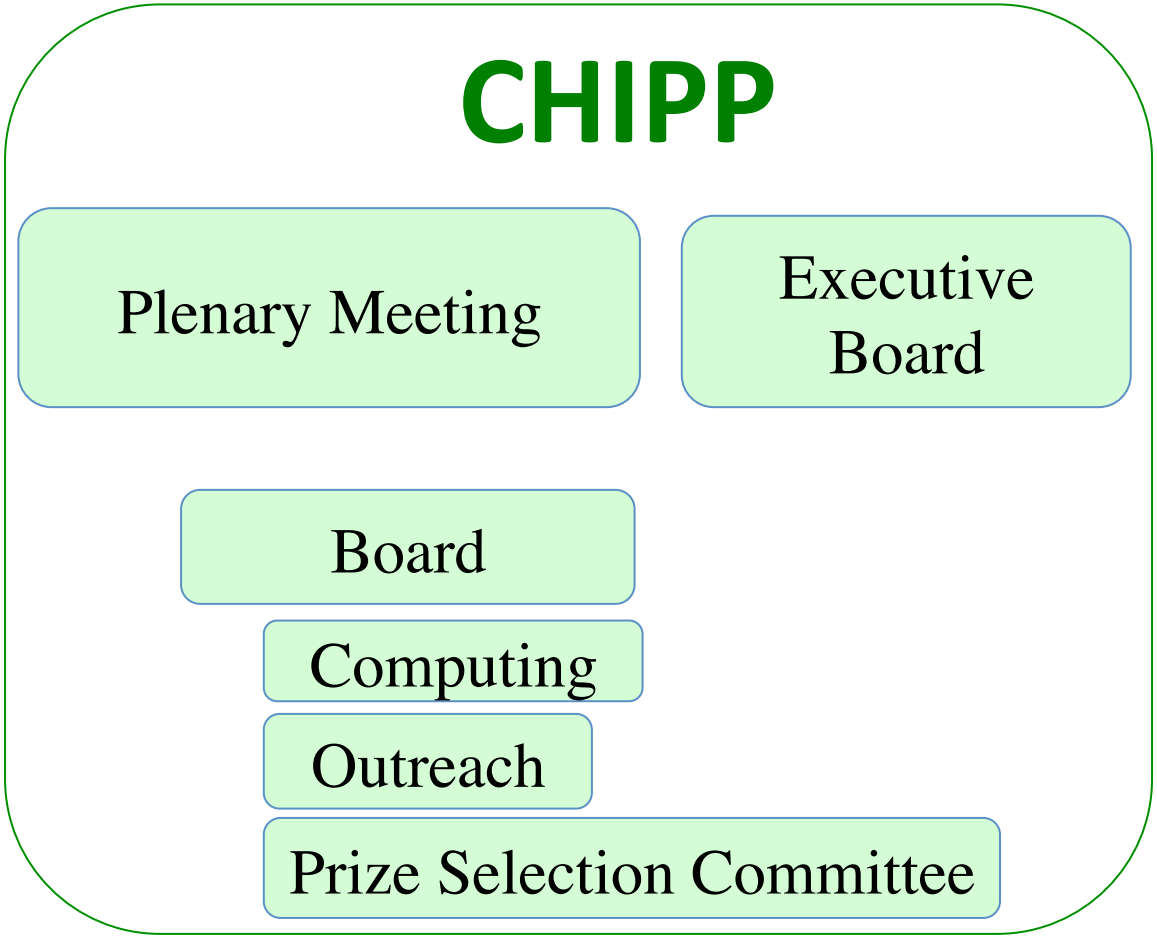
d) To promote public awareness on particle, astroparticle and nuclear physics

CHIPP Organisation

CHIPP membership

(a) The particle, astroparticle and nuclear physicists holding a Master in physics and working for a Swiss institution

(b) The Swiss PhD nationals working at CERN.



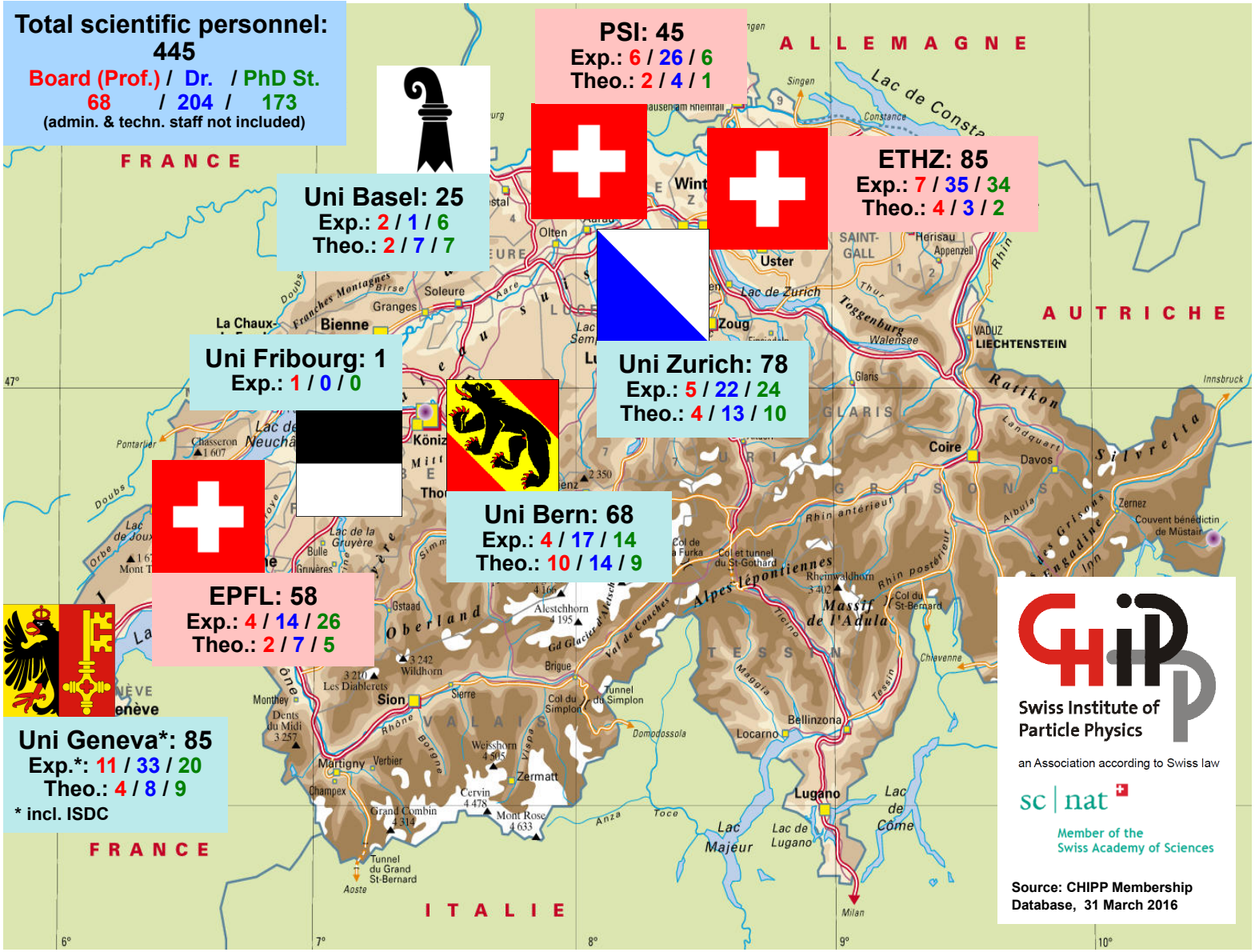
Plenary meeting, open to all the CHIP members. All the major decisions are endorsed. Its annual meeting also works as science forum.

Board consists of professors, core of the CHIPP activities

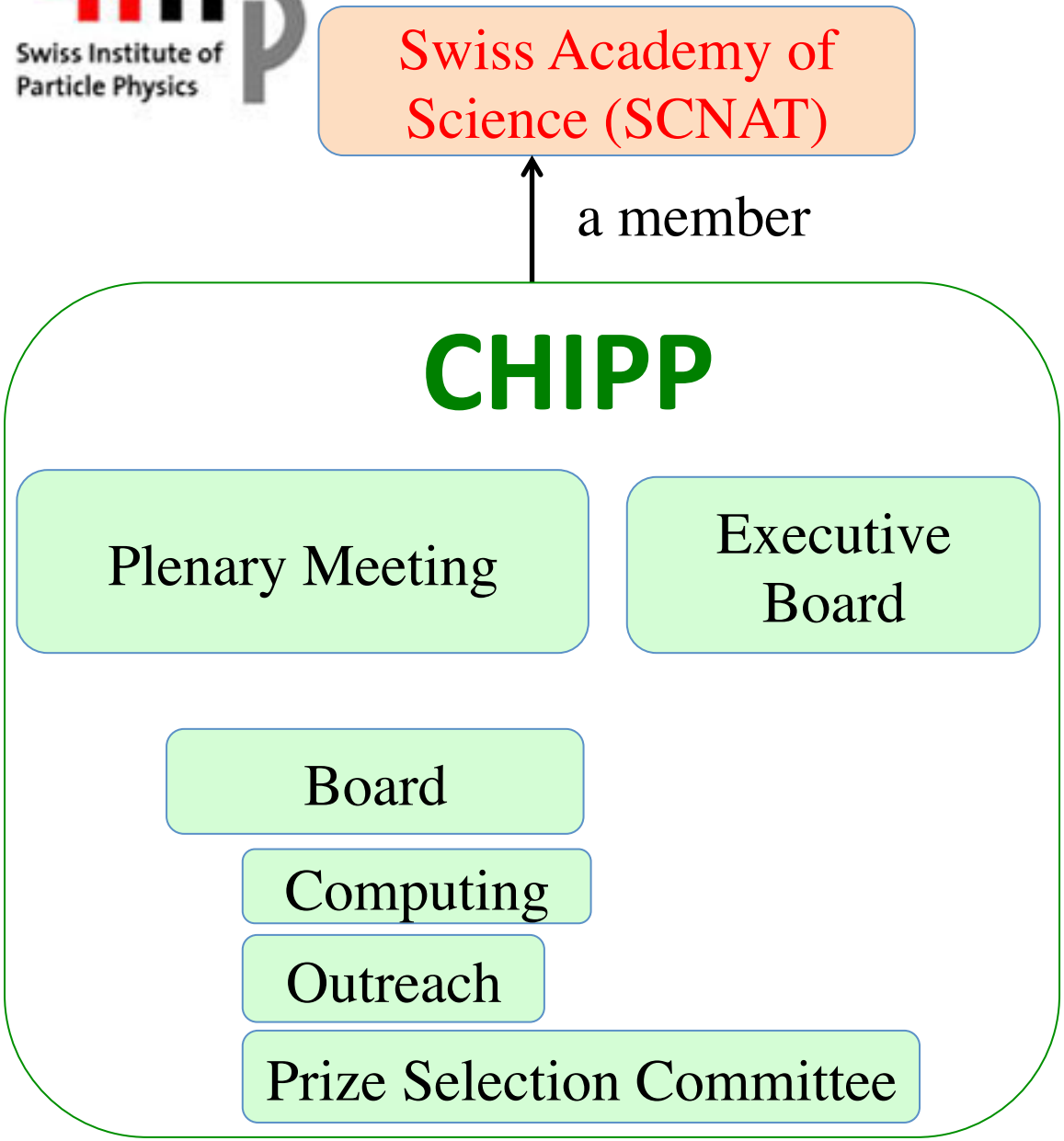
Executive Board is in charge of day to day operation

All the three meeting are chaired by CHIPP Chair

CHIPP Landscape 2016



CHIPP External Relation



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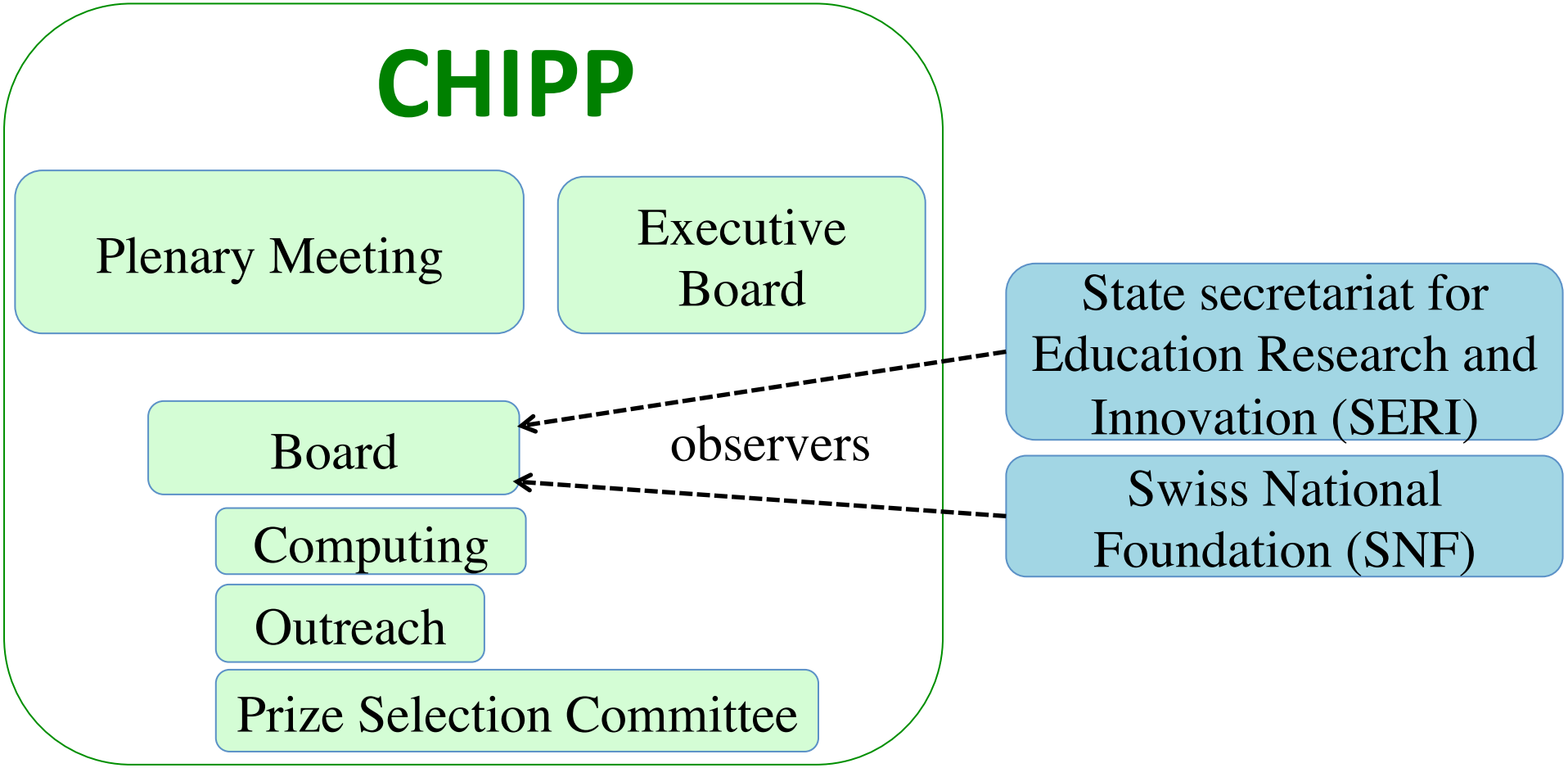

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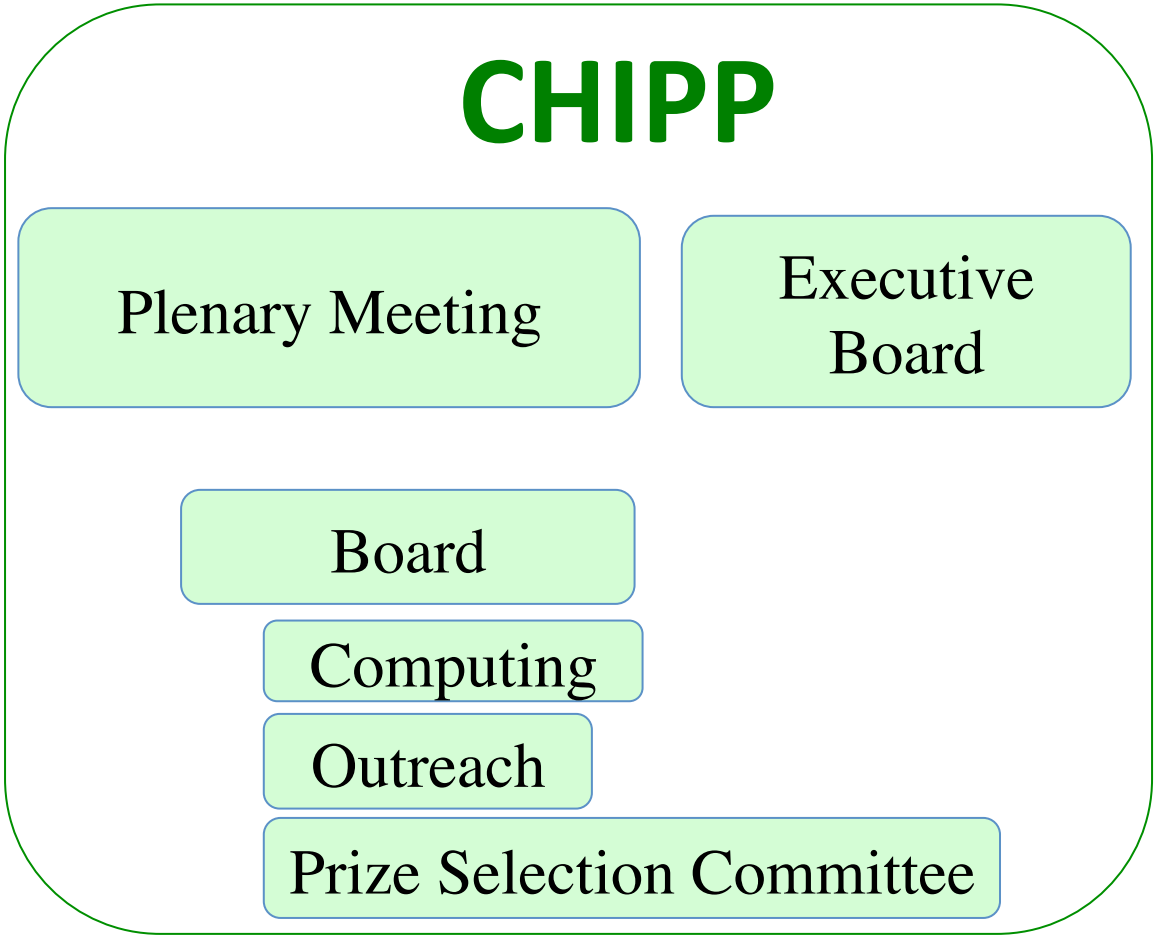


CHIPP also nominates
-ACCU delegates to CERN
-ECFA delegates to ECFA
-CERN Council Scientific delegate to SERI

CHIPP Activities

- Awarding annually CHIPP Prize for the best PhD students
- Holding a CHIPP PhD school (every other year)
- Holding Topical Workshops and periodically updating the Roadmap/Whitepapers
- Holding periodical discussions on the long term financial needs and informing them to the federal authorities
- Making common requests to FLARE* for LHC experiments M&O and Computing
- Maintaining CHIPP outreach web-site and supporting other outreach activities
- …

*FLARE: funding line for large equipment for particle physics, astrophysics (astronomy), and astroparticle physics (FORCE+FINES)

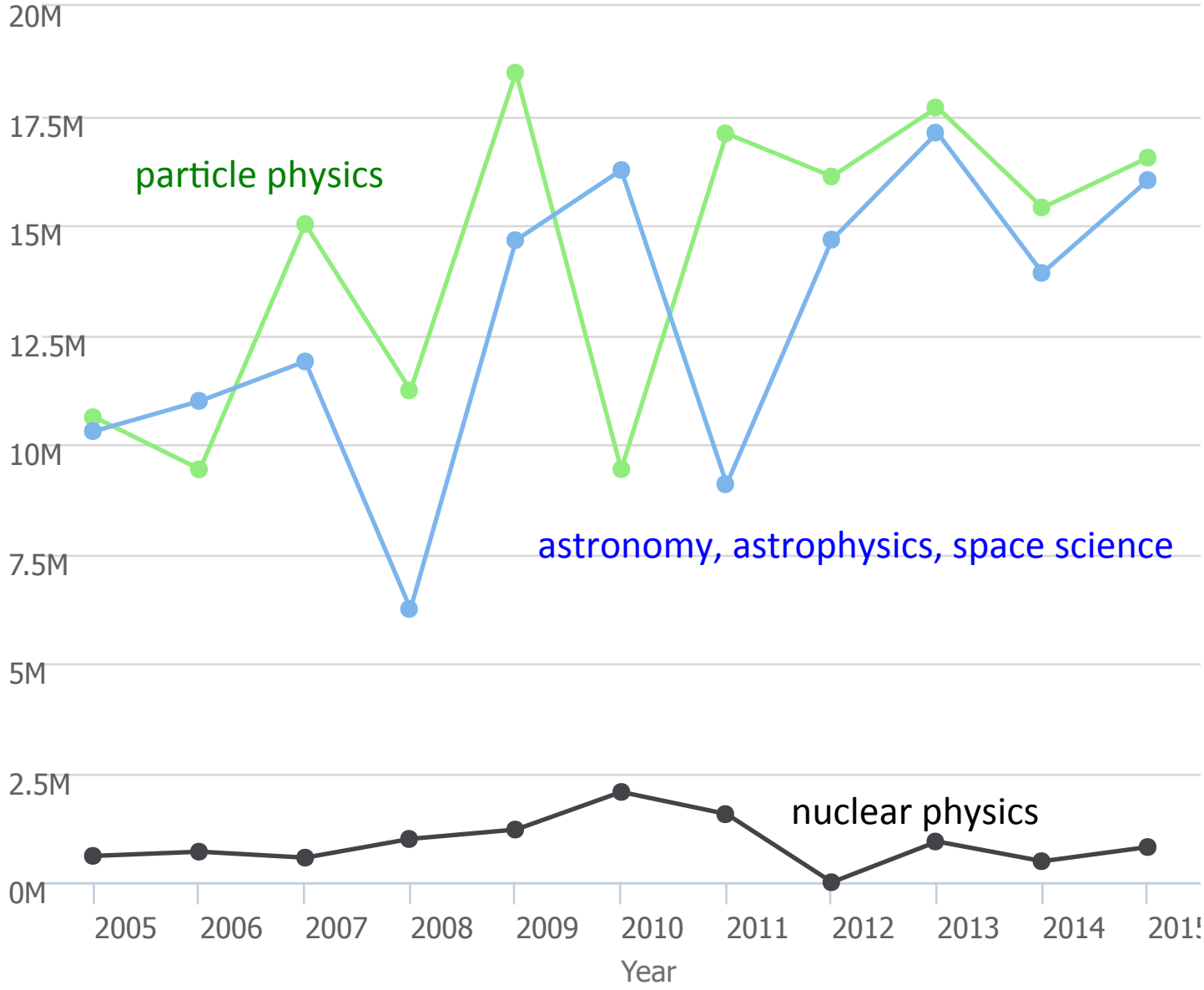
Funding in Switzerland

- SERI supports large international infrastructure, including CERN (and CTA in the future?)
- Swiss National Foundation supports groups through competitive funding
  - **Project:** largely for the operation of the research groups (PhD students, Post-docs, travel, laboratory equipment, …)
  - **Individual grants:**
  - **Funding LArge international REsearch projects (FLARE):** funding source for the detector construction, Computing and M&O (LHC exp.)

FLARE for 2013-2016:
26.5 MCHF was approved

Funding in Switzerland

SNF approved
with
all funding schemes
(CHF)



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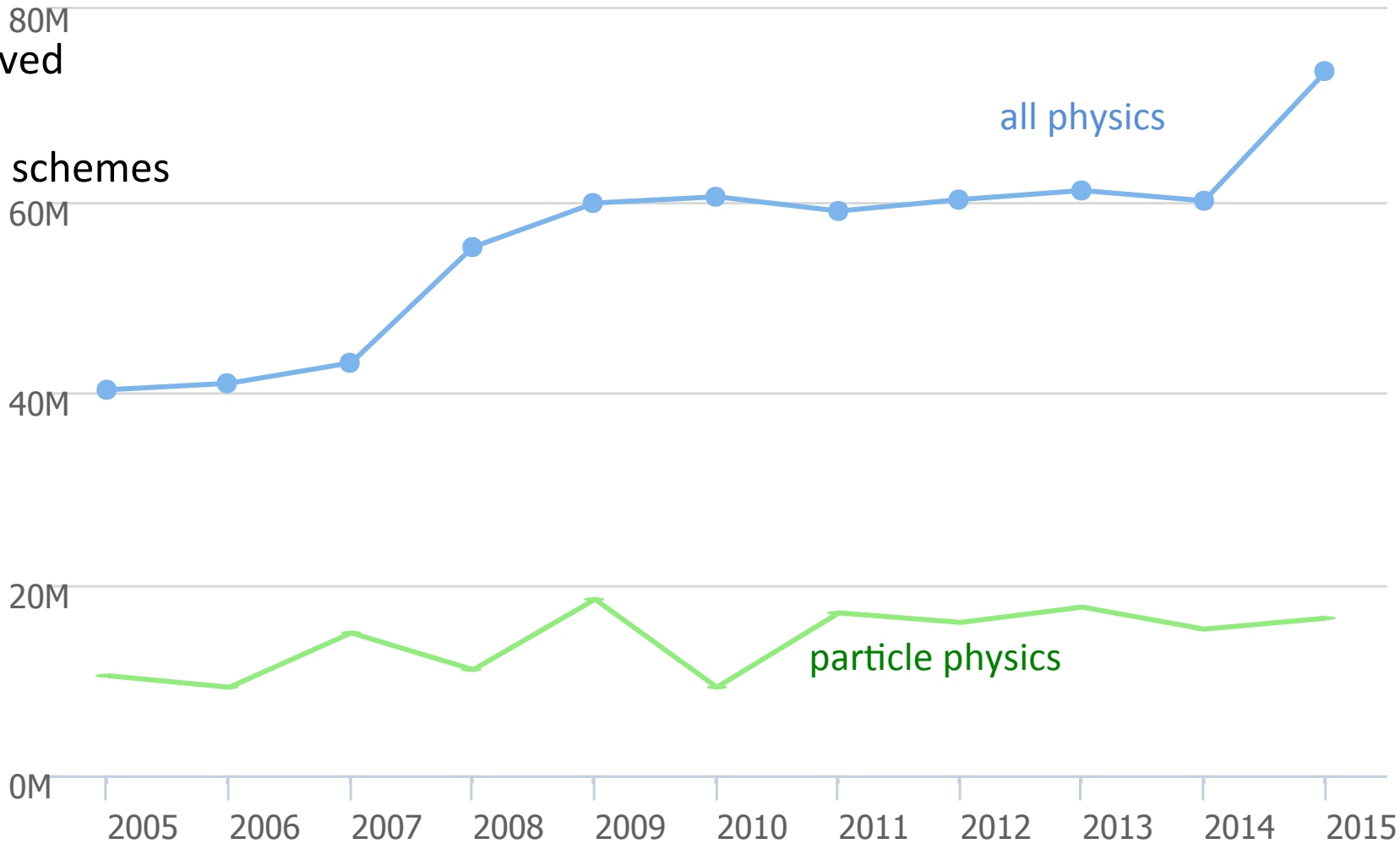
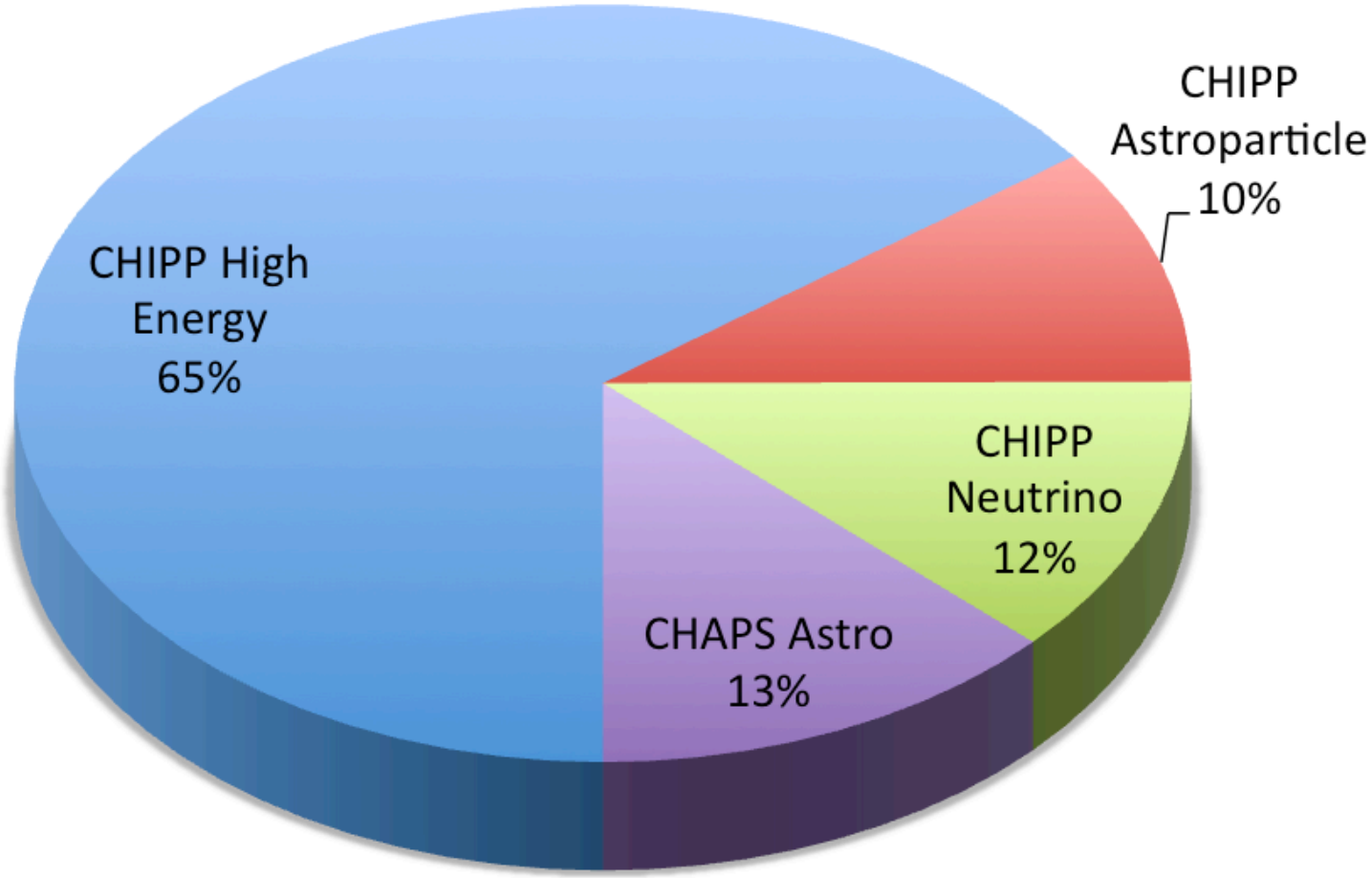


Funding in Switzerland

FLARE 2013-2016 distribution (CHIPP ~87%)



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FLARE for 2017-2020:
32 MCHF requested to the parliament

Funding in Switzerland

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- Swiss National Foundation supports groups through competitive funding
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  - **Individual grants:**
  - **Funding LArge international REsearch projects (FLARE):** funding source for the detector construction, Computing and M&O (LHC exp.)
- Cantonal universities and ETH-domain institutes (ETHZ, EPFL and PSI) receive support from their funding authorities, i.e. **Cantons and ETH Board**, respectively.
  - PhD students, Post-doc and other operation costs
  - **Special contribution to the experiments in the past was crucial**

CHIPP funding concerns >2016

- Increase of 20% for the requested FLARE funding to the parliament, however
  - Needs from astronomy and astrophysics would likely to increase,
  - Substantial contribution from the Canton and ETH Board would be needed for the ATLAS and CMS Phase II upgrade as being planned now
  - Contribution to the long baseline neutrino experiments (DUNE/Hyper-K) has not yet been accommodated
  - CTA is assumed to be funded through the SERI request to the parliament

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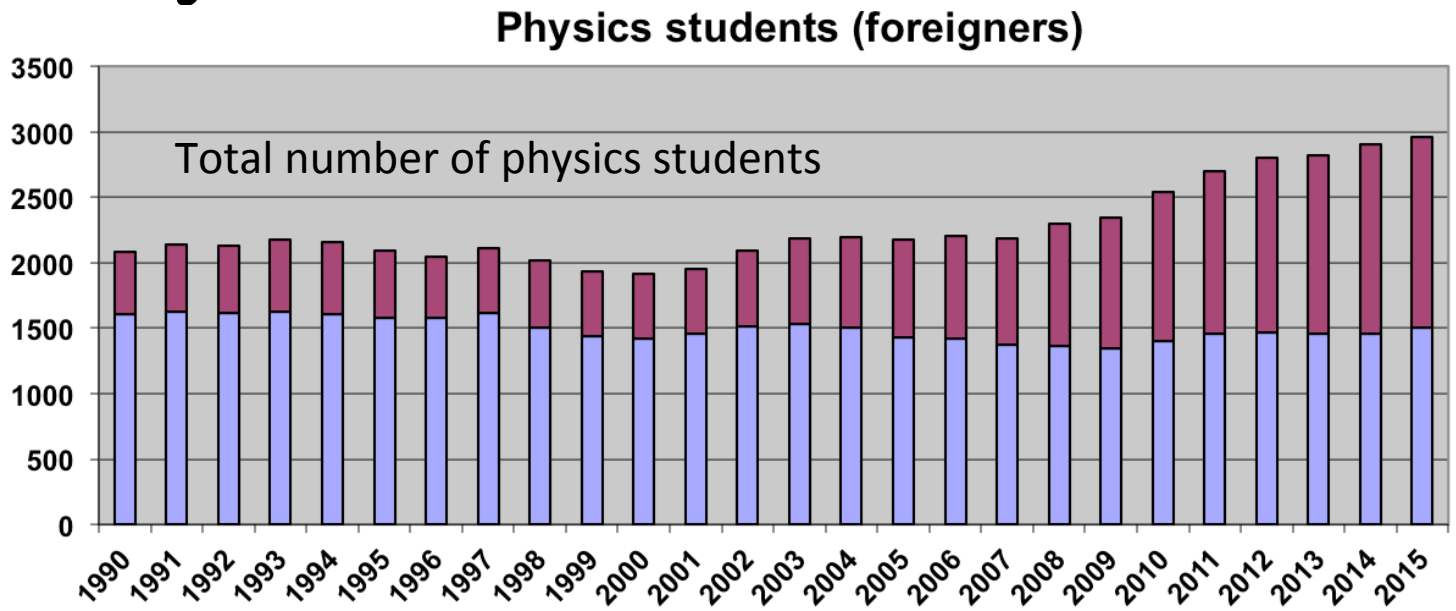
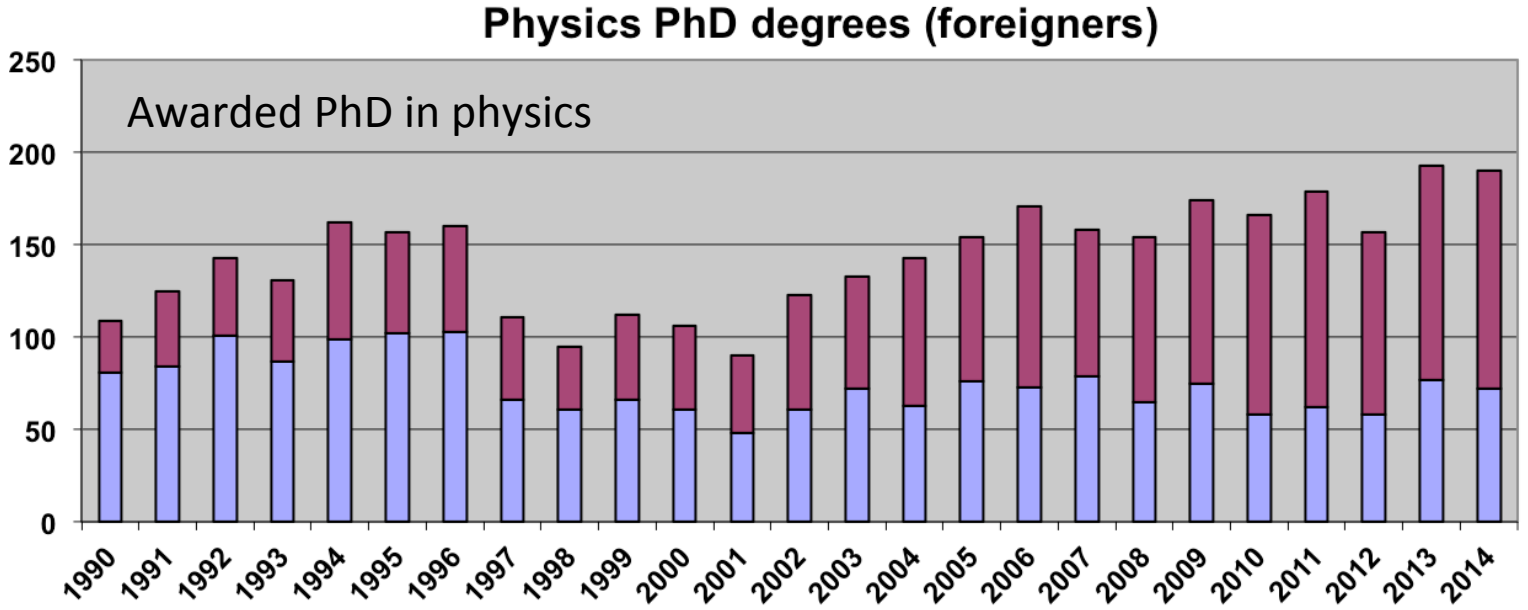
Homework for the CHIPP

Physics Students Statistics

Foreign students

CH students





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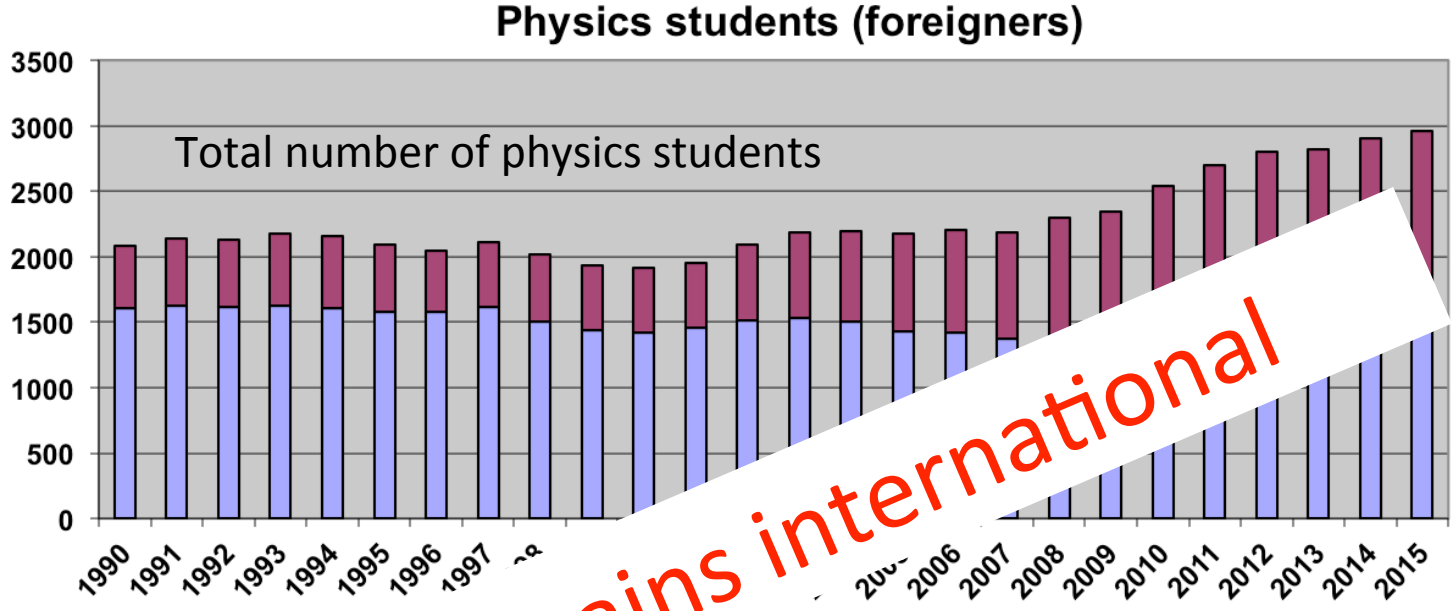
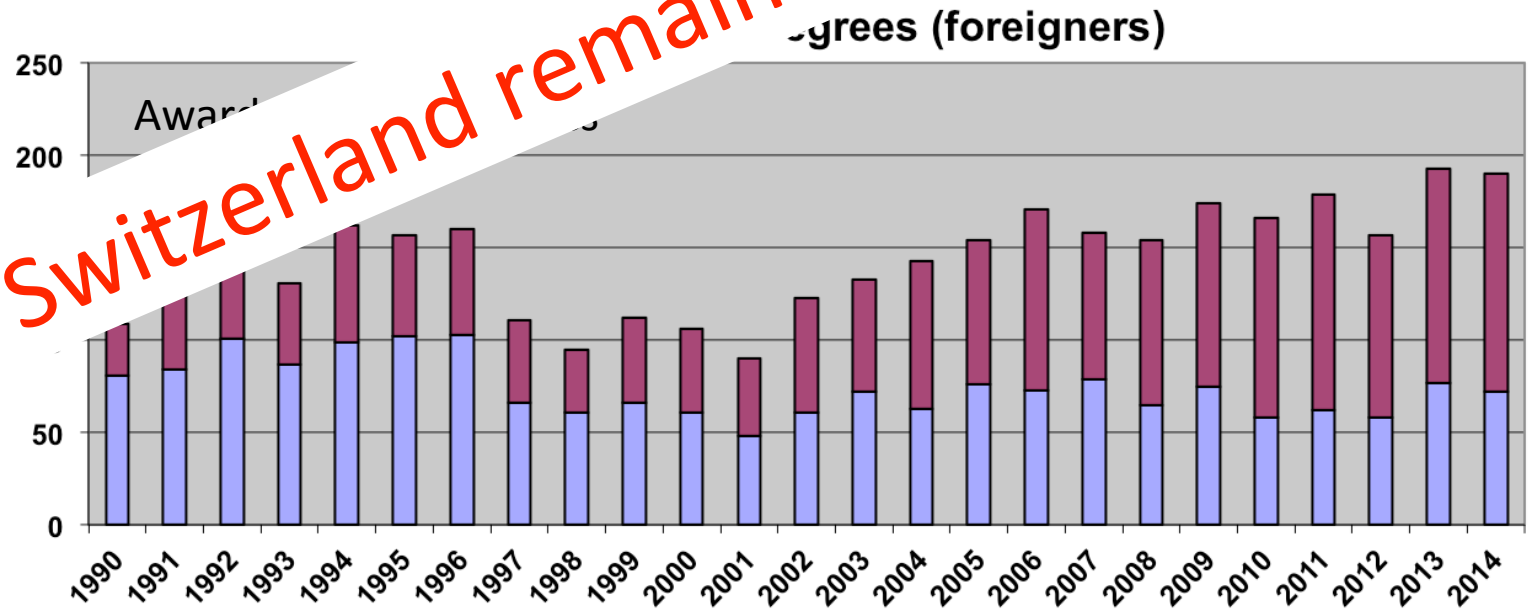


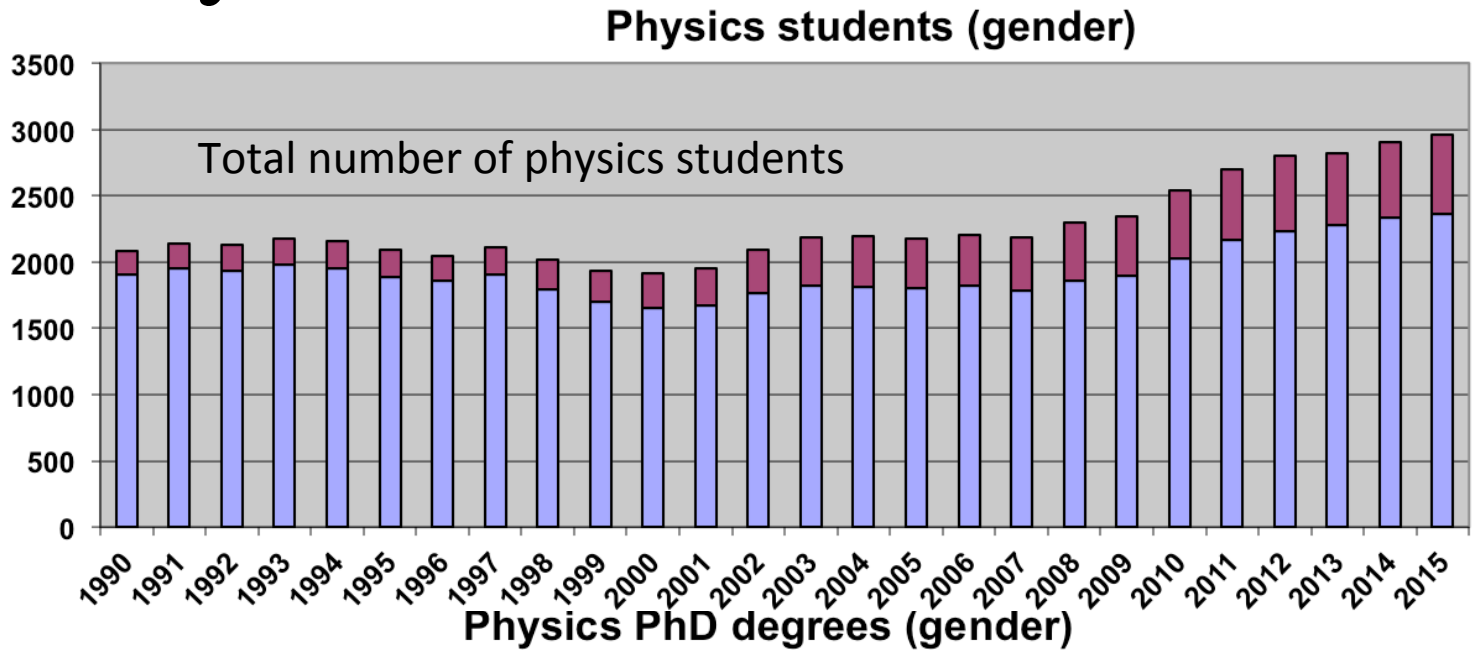
Switzerland remains international

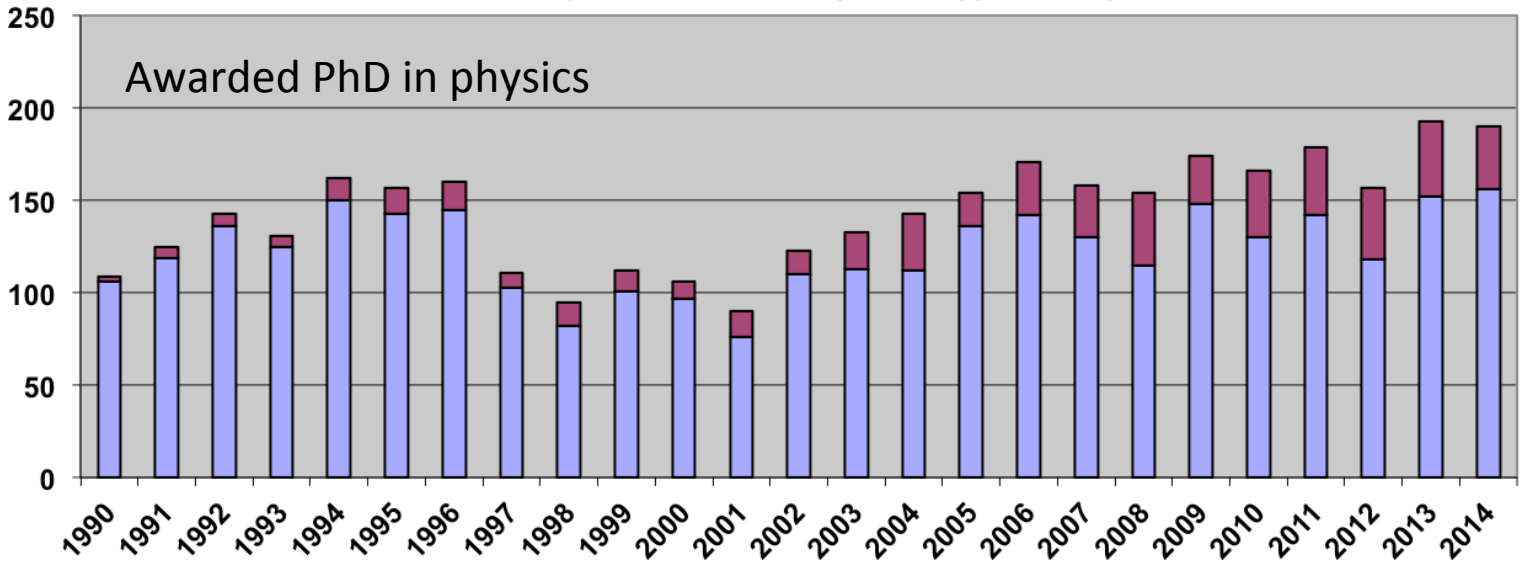


Physics Students Statistics

Female students

Male students





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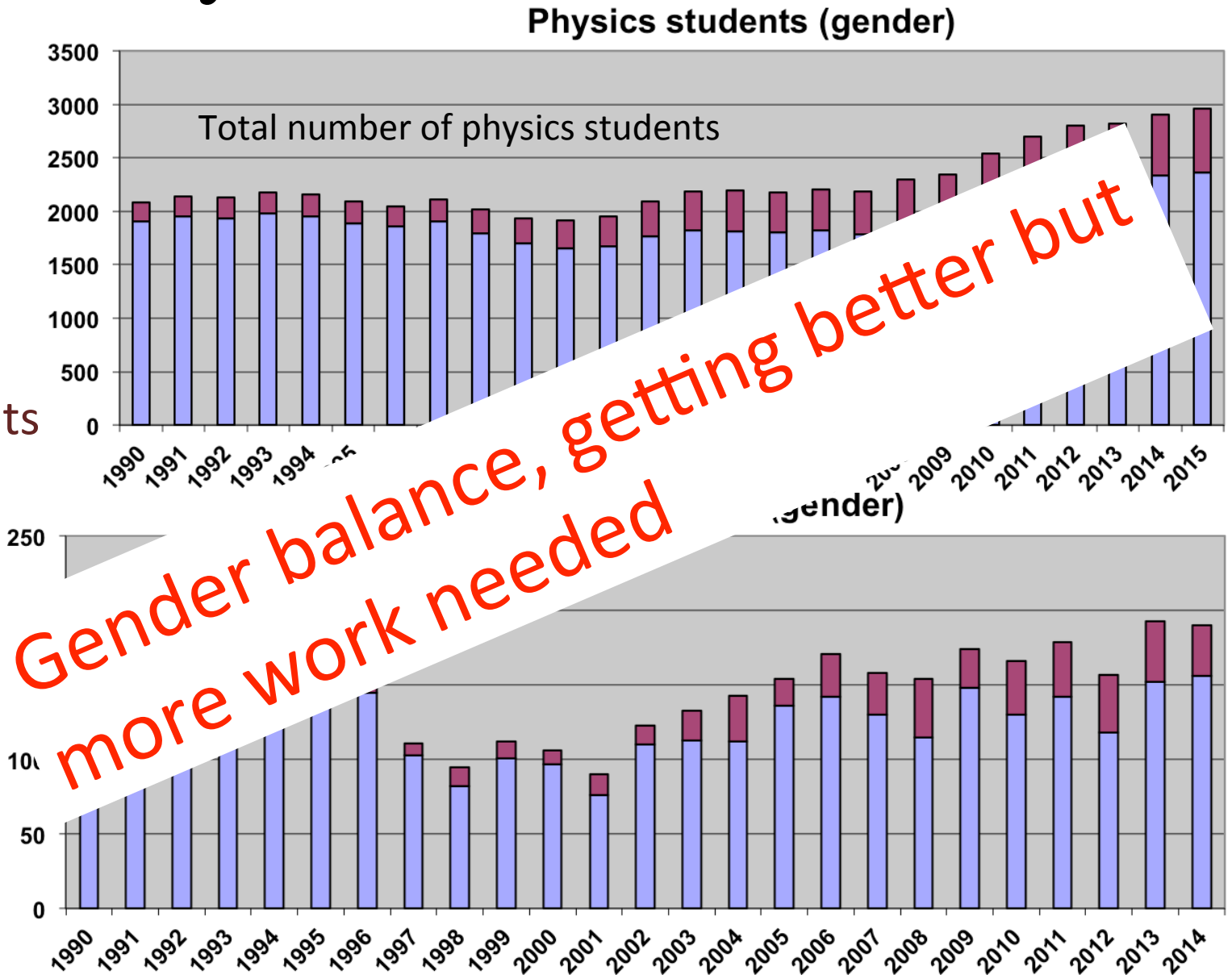
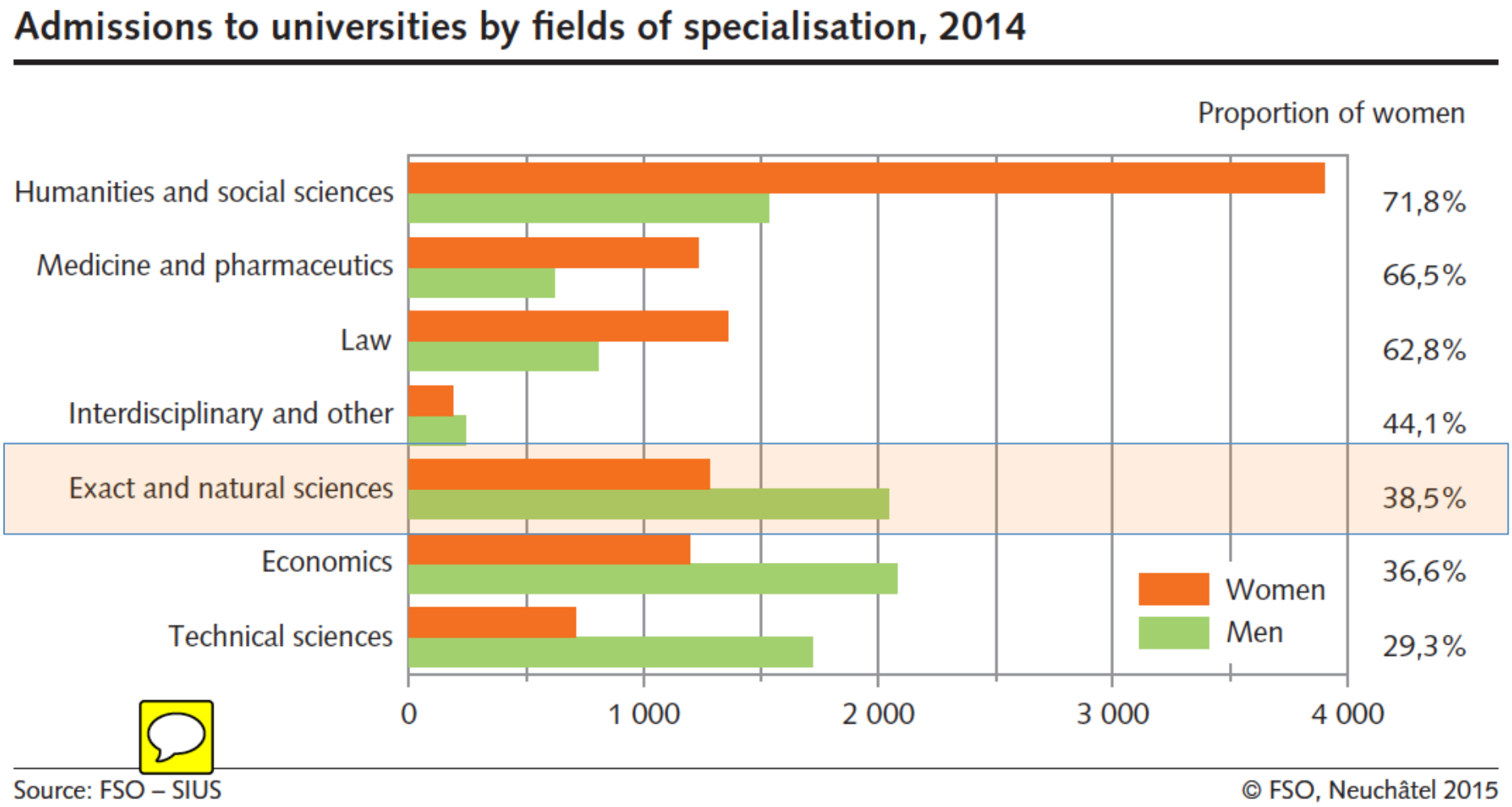


Gender balance, getting better but more work needed

General Student Gender Issue



Early Stage Gender Issue

T 4 Students in baccalaureate schools by specific option and gender, 2013/14

	Total	Male	Female
Baccalaureate: total	**70 641**	**30 918**	**39 723**
Modern Language	14 961	3 794	11 167
Economics and Law	13 767	8 094	5 673
Biology and Chemistry	12 336	5 952	6 384
Physics and Applied Mathematics	6 844	5 215	1 629
Visual Arts	5 165	1 178	3 987
Philosophy, Education science, Psychology	3 968	1 018	2 950
Classic Languages	2 923	1 186	1 737
Music	2 875	892	1 983
Without federal recognition	1 307	549	758
Mathematics and sciences	186	110	76
Option not specified	6 309	2 930	3 379

Source: FSO – SDL

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Problem must be addressed much before

In this meeting,

- Following talks will cover the all Swiss particle and astroparticle physics activities as well as the related issues, such as computing and outreach,
  and PhD student's view.