

Theory @ CERN

Les Houches 2014

Department of Physics

Head, Deputies, Planning Officer...

TH

EP





Groups

drawn off scale
TH size ~ 5% EP





Physics Department

Department Head (DH)	<u>Livio Mapelli</u>	
Department Head Deputy (DDH)	<u>Roger Forty</u>	
Department Planning Officer (DPO)	<u>Catherine Decosse</u>	
Human Resources Officer (HRO)	<u>Cecile Granier</u>	

Theory “Unit”:

Wolfgang Lerche

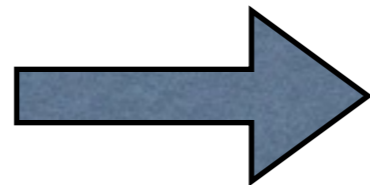


Luis Alvarez-Gaumé



History

- CERN started 1954 with the **TH division** in Copenhagen under the guidance of Niels Bohr
- Its main role is to be a center of excellence for theoretical high energy physics in all its aspects



TH mandate

Mandate

- Top quality theory group with excellence and creativity in research in **all** areas related to particle physics
- Provide support to the experimental program of CERN and profit from its stimulating environment; but we are **not** a service department!
- Reference center for the international theoretical physics community : a high quality place for getting theorists together, exchange ideas and collaborate.
- Contribute to training and outreach onsite and elsewhere : academic training, high school teachers, summer students, CERN schools, ...

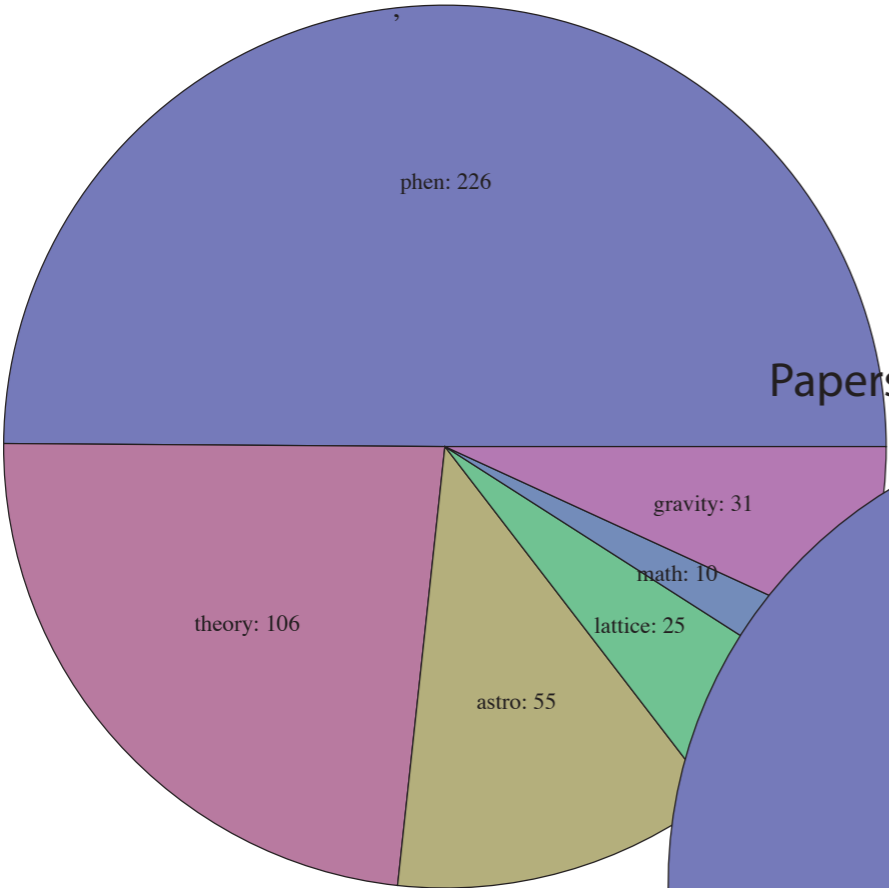
Fields of Research

- Standard Model, Collider phenomenology
- Beyond the SM, including neutrinos and non-accelerator experiments
- Formal theory: string theory, QFT, and mathematical physics
- Astroparticles and cosmology
- Heavy ions
- Lattice field theory

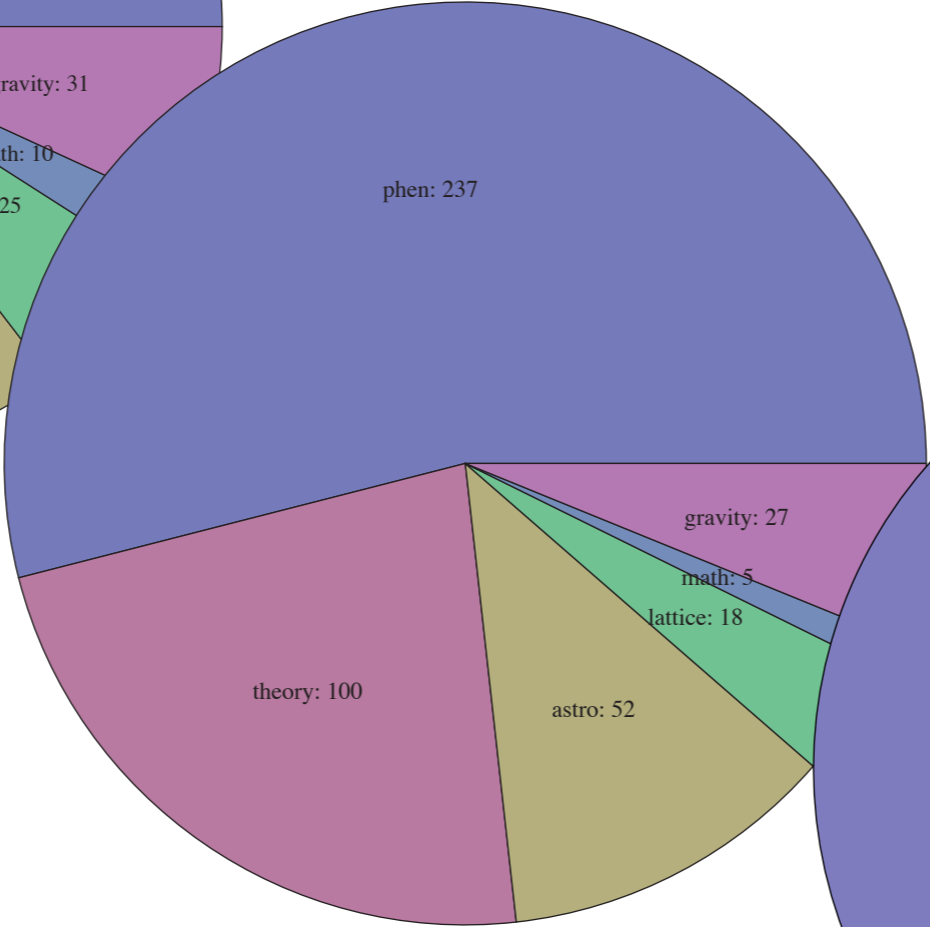
Papers versus fields, CERN-TH 2007

Scientific output

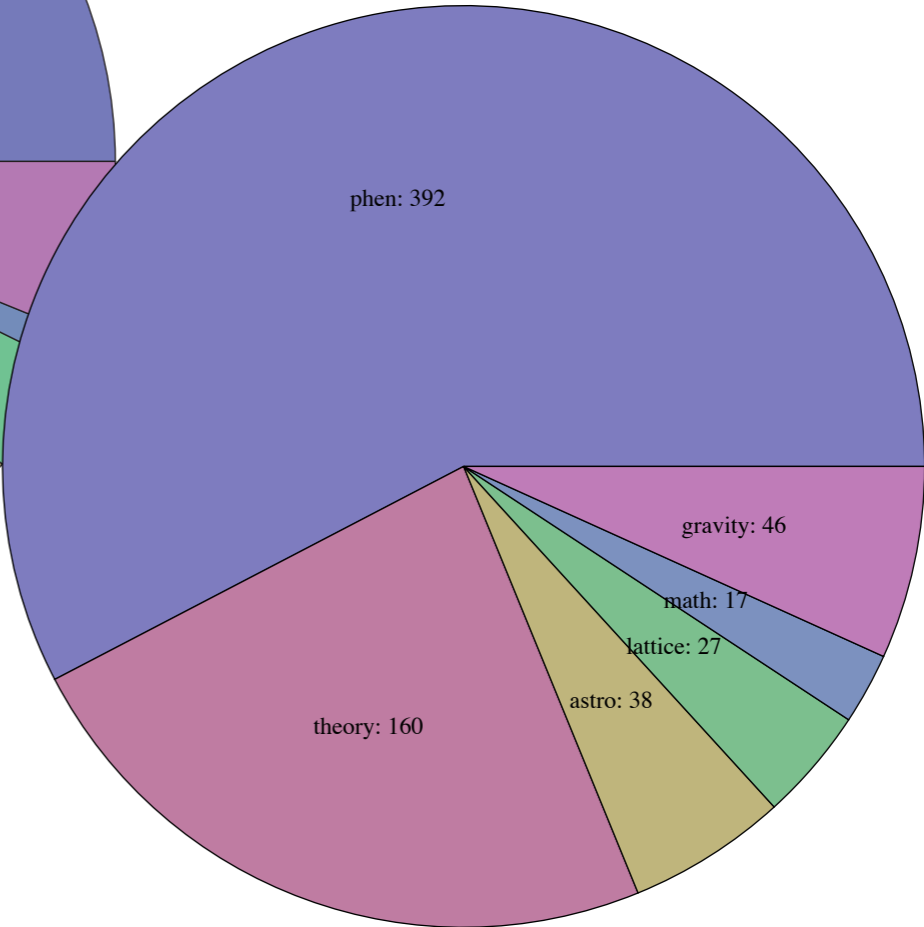
more than one paper/day



Papers versus fields, CERN-TH 2011



Papers versus fields, CERN TH 2013



Regular activities

- Seminars 14:00 :
 - wednesday colloquium mandatory
 - tuesday formal theory string/QFT
 - thursday BSM forum
 - friday particle & astroparticle
- Journal clubs :
 - monday formal theory
 - wednesday cosmo coffee
 - thursday cross collider
- TH institutes: a few per year, each 1..4 weeks
- LPCC activities (LHC Physics Center at CERN)
- TH retreat
- TH picnic, TH Xmas party (Dec 18)



Current staff

Indefinite

Luis Alvarez-Gaumé
Gian Giudice
Wolfgang Lerche
Michelangelo
Mangano
Gavin Salam
Urs Wiedemann

Fixed-term

Diego Blas
Roberto Contino
James Drummond
Stefano Frixione
Andrey Katz
Niel Lambert
Kyriakos Papadodimas
Agostino Patella
Boris Pioline
Slava Rychkov
Sergei Sibiryakov
Andreas Weiler
Giulia Zanderighi

Admin

Michelle Connor
Nanie Perrin
Jeanne Rostand

System Manager

Elena Gianolio

(See task list on the web)

Fellows, Associates and Visitors

- Every year we employ ~13 MS fellows + 2 NMS.
In addition a few agreements e.g. Korea, IKY-Greece + several European grants.
- 10-15 Paid Associates yearly
- ~ 500 paid short-term visitors (a few days to 2-3 months) + 300 unpaid (budget ca IMCHF)
- TH institutes (about 1/4 of our visitors budget).
A way to share our resources with the outside world
- ~ 25 doctorate students paid by external sources (national funds + european grants)

Fellows

- complete academic freedom
- (otherwise see CERN code of conduct)
- **traveling budget 6 kCHF over 2 years**
- register your **absences** in EDH (official travel or holidays)
Your office can be assigned to a visitor during your absence
- strict deadline 6 months for travel reimbursement
- ask a TH preprint number to the secretariat
- be **involved** in seminar / j. club/TH-Inst. organization
- kick the staff for discussions / collaborations
We may be busy but have always time for you!
- Let us know your suggestions and criticism

Your stay at CERN is important for your career,
so you should benefit as much as possible

Interact and make great discoveries !!

Enjoy the TH retreat

Many thanks Michelangelo for the organization

