

# Summary (aka Gran Finale!)



ACAT 2013

21 May 2013

Federico Carminati





# China and me

- First visit 1986 (!)
  - Those where the times....



# China and me

- First visit 1986 (!)
  - Those were the times....

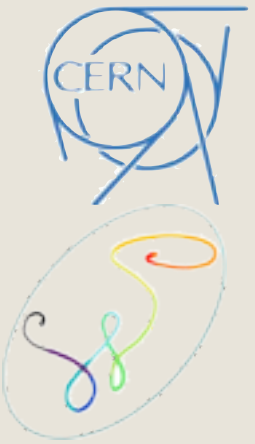




# China and me



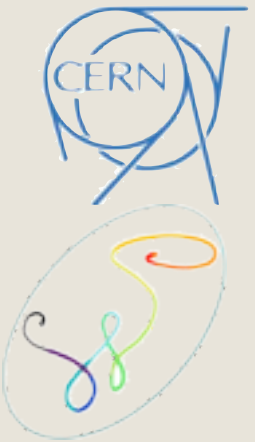
- CHEP 2001







# China and me



## ■ CHEP 2001





# China and me



## ■ CHEP 2001







# China and me



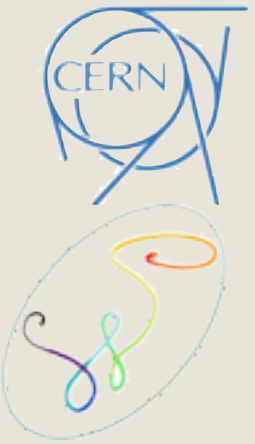
## ■ CHEP 2001







# China and me



## ■ CHEP 2001







# China and me



## ■ CHEP 2001







# China and me



## ■ CHEP 2001

Please take me to Beijing Friendship Hotel.

请送我去北京友谊宾馆





# China and me

- ACAT 2013







# China and me

## ■ ACAT 2013





# China and me

- ACAT 2013





# China and me

■ ACAT 2013







# China and me

## ■ ACAT 2013







# China and me

## ■ ACAT 2013







# China and me

■ ACAT 2013







# China and me

■ ACAT 2013







# China and me







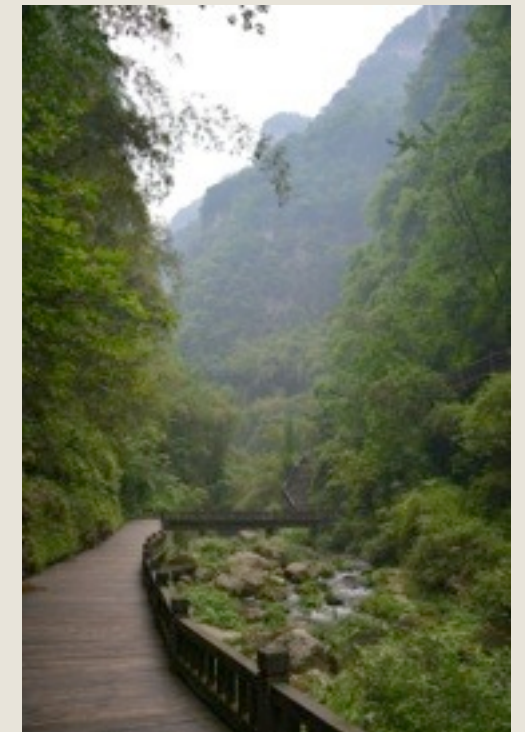
# China and me







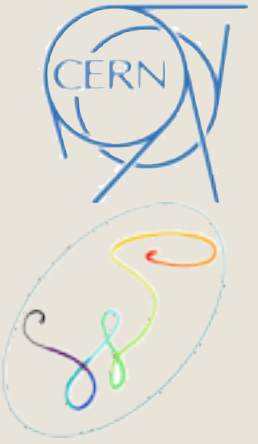
# China and me







# China and I





# China and I





# China and I





# China and I







# China and I

- God made Earth and skys





# China and I

- God made Earth and skys
- Everything else is made in China







# China and I



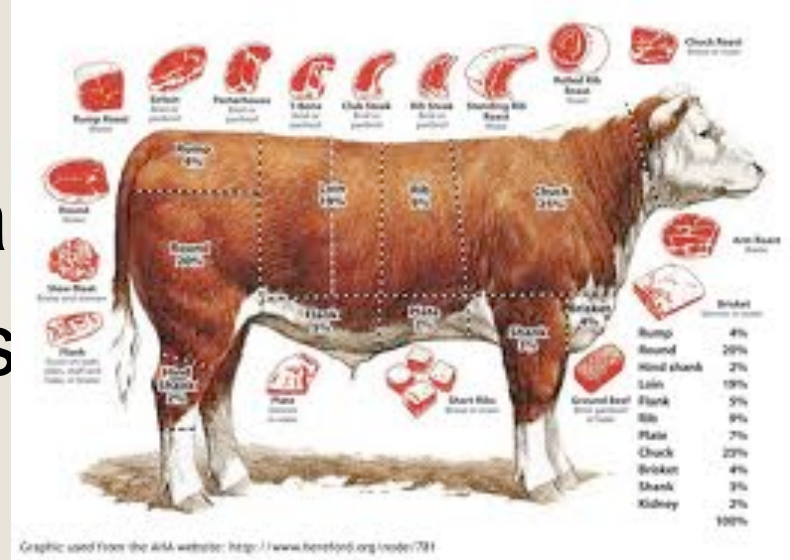
Earth and skys  
se is made in China







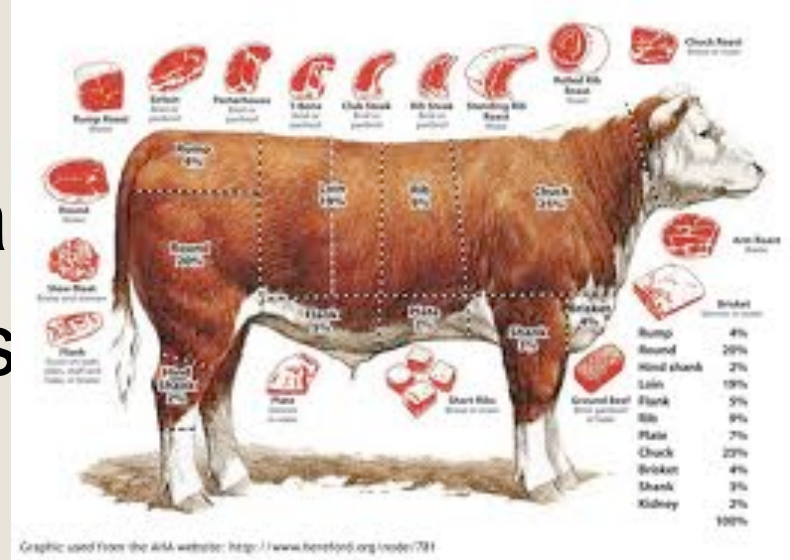
# China and I







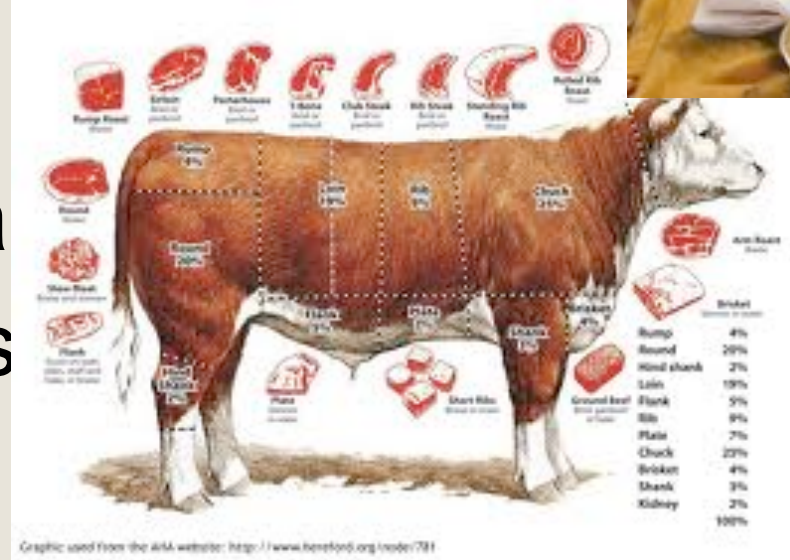
# China and I







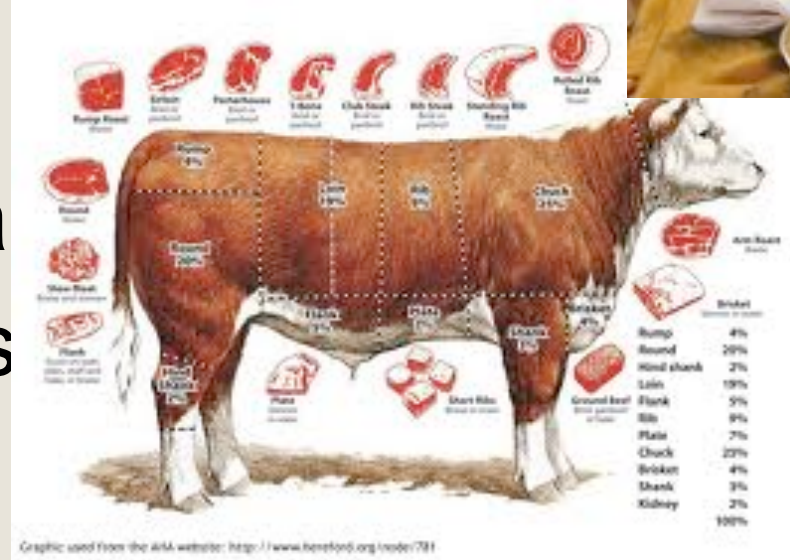
# China and I







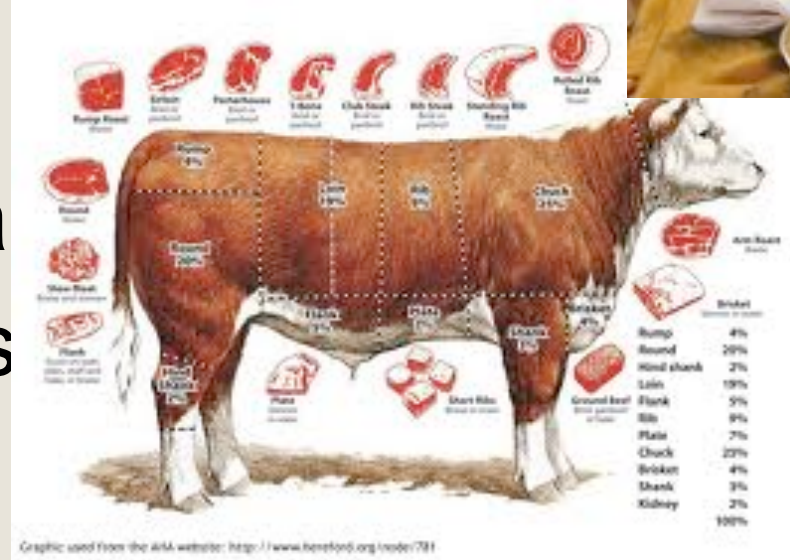
# China and I







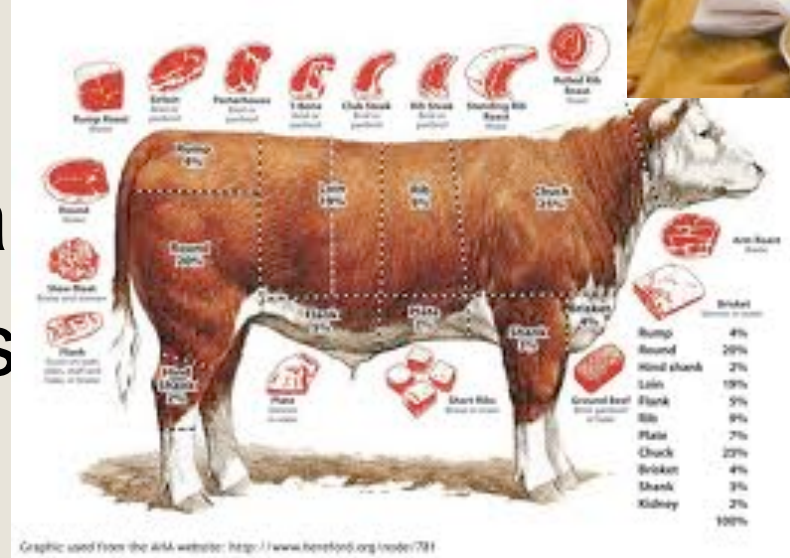
# China and I







# China and I



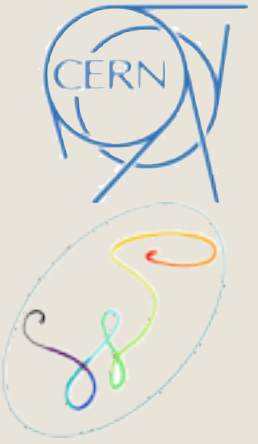
- If you need to ask what is it, you do not deserve to eat it...







# China and me



# China and me





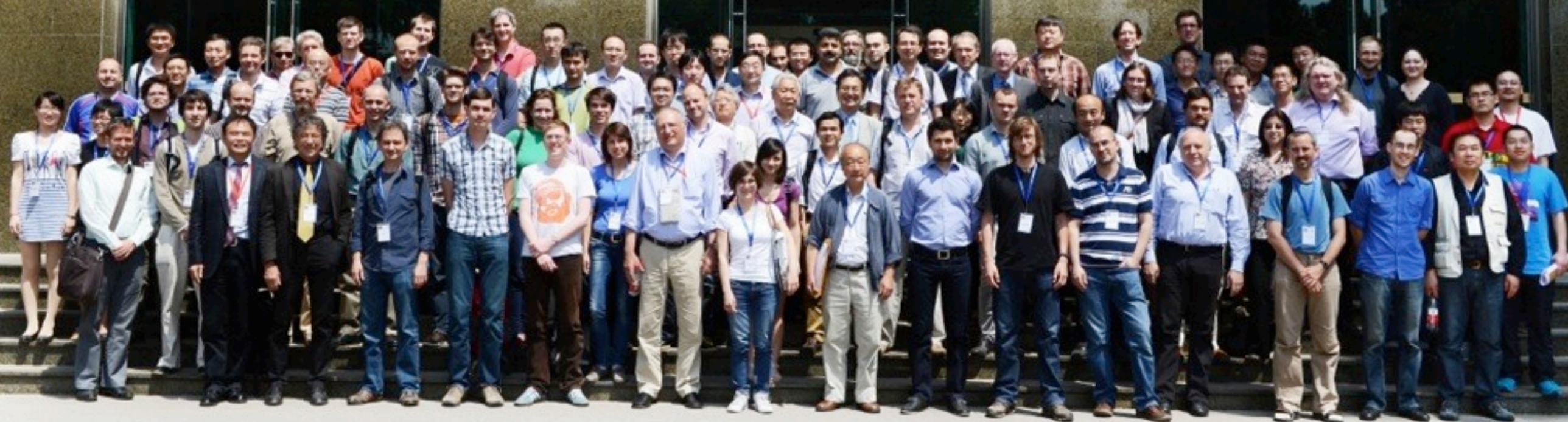


# China and me





The 15th International Workshop on Advanced Computing  
and Analysis Techniques in Physics Research --ACAT2013,  
Beijing, May 16 ~ 21, 2013.





The 15th International Workshop on Advanced Computing  
and Analysis Techniques in Physics Research --ACAT2013,  
Beijing, May 16 - 21, 2013.





The 15th International Workshop on Advanced Computing  
and Analysis Techniques in Physics Research --ACAT2013,  
Beijing, May 16 ~ 21, 2013.





# ACAT



15th International Workshop on  
advanced computing and analysis techniques in physics

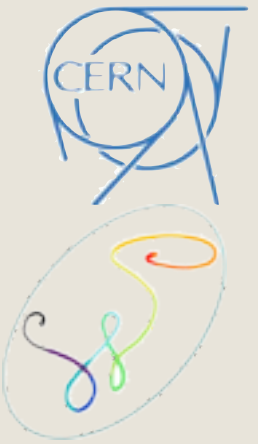
May 16-21, 2013, Beijing, China  
<http://acat2013.ihep.ac.cn>



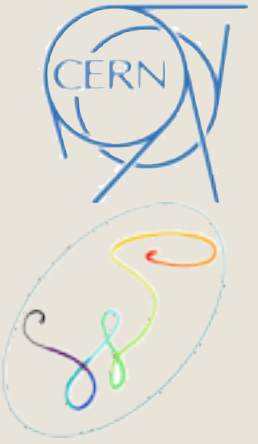
- 139 people registered
  - Not all here :(
- 130 submitted abstracts (!)
  - 6+5+5 (16) Plenaries
  - 23+27+29 (79) Parallels
  - 3+4+4 (11) Posters

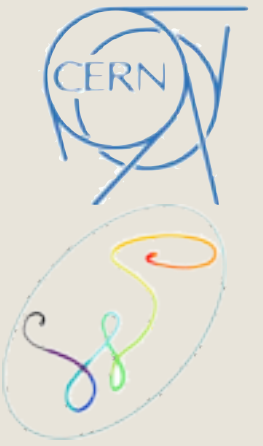




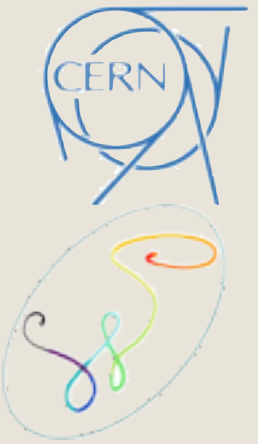


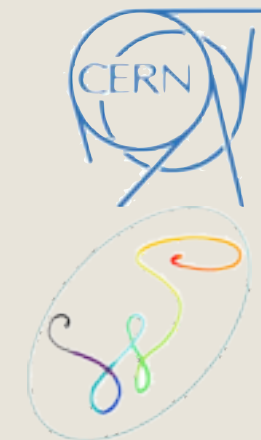




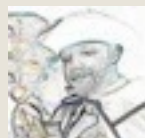
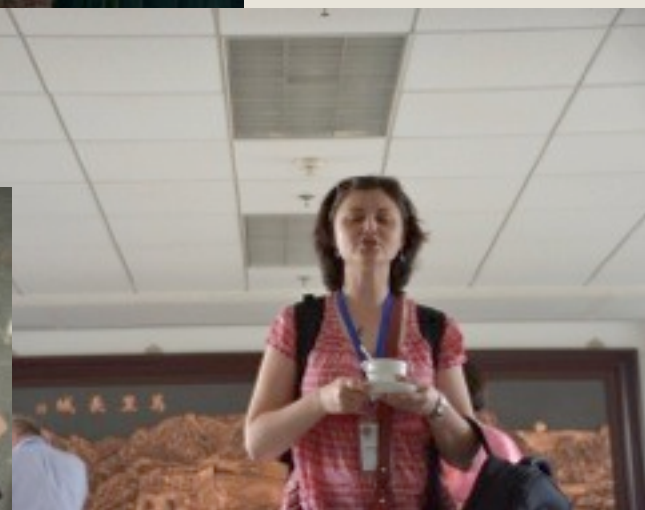
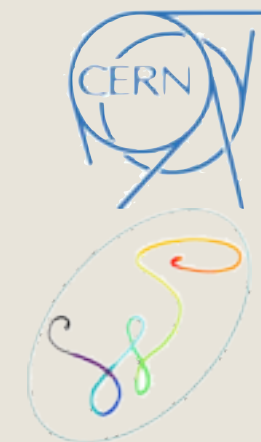


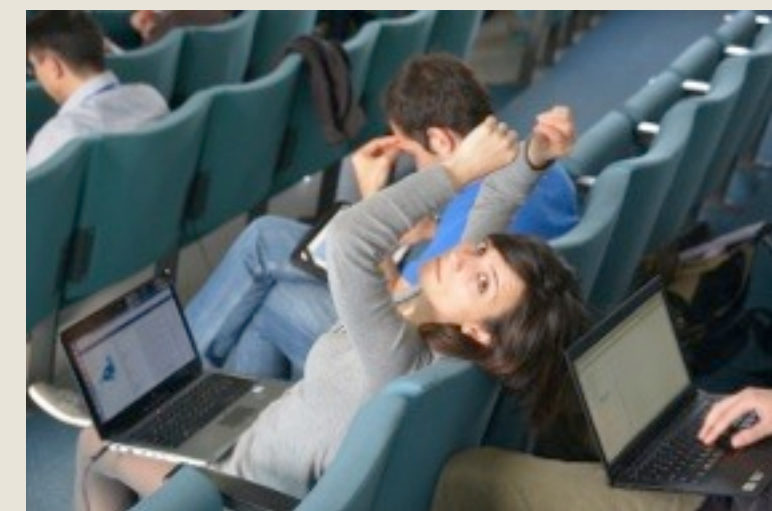
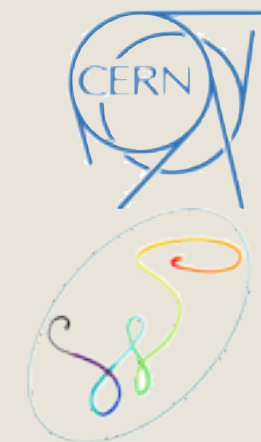




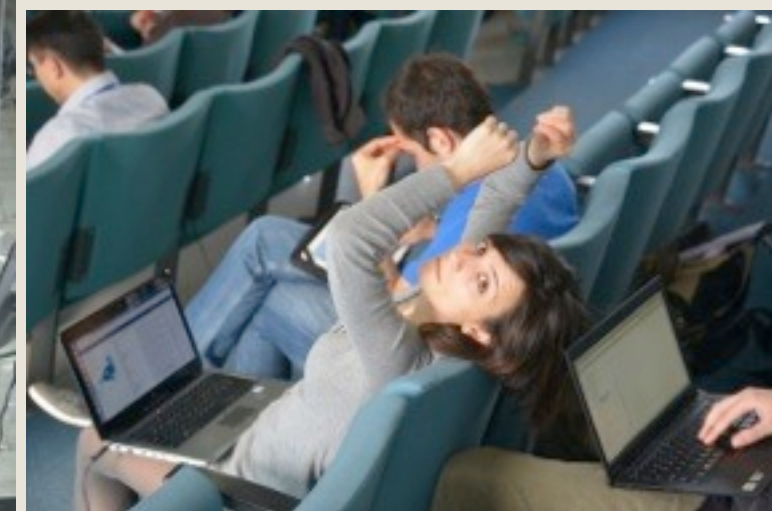
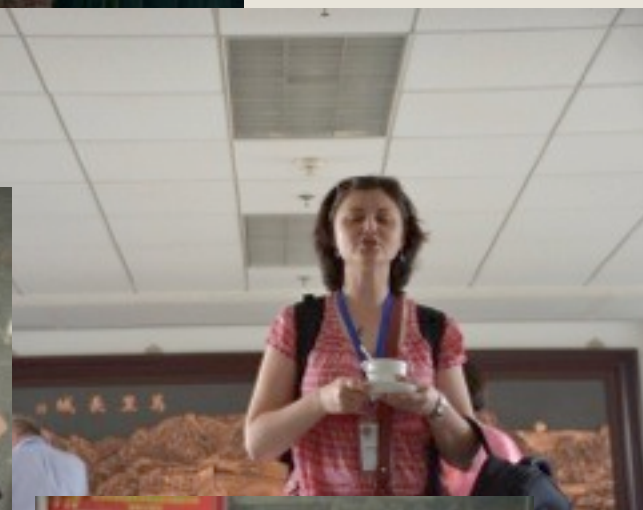




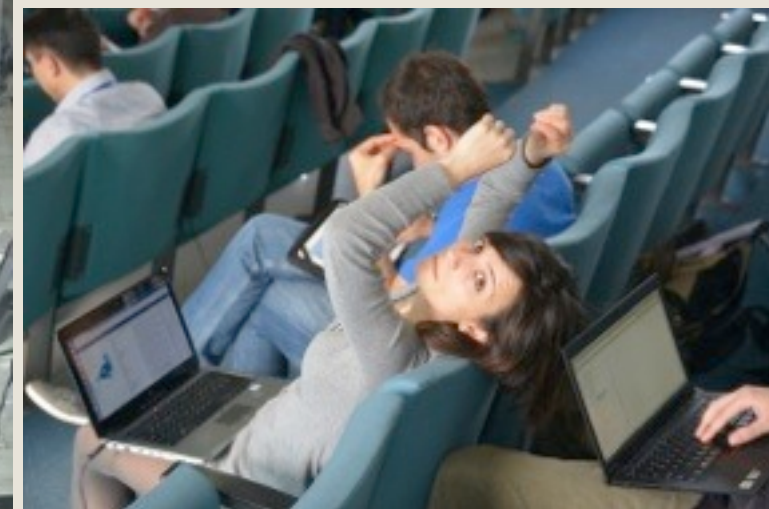
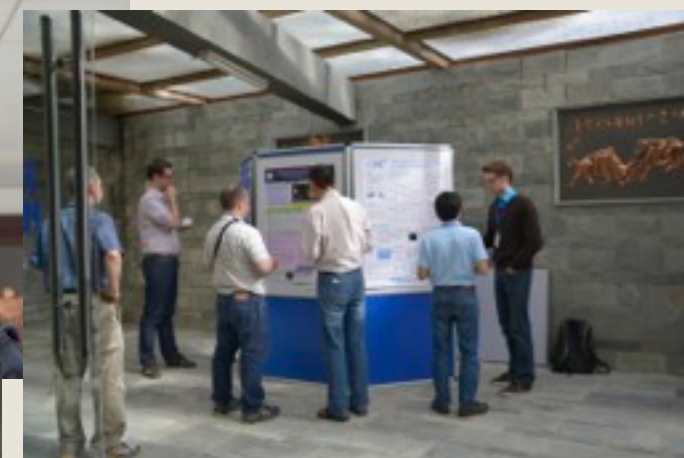
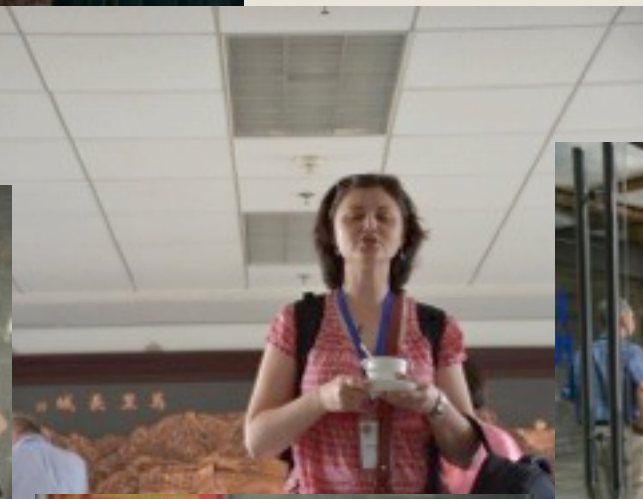




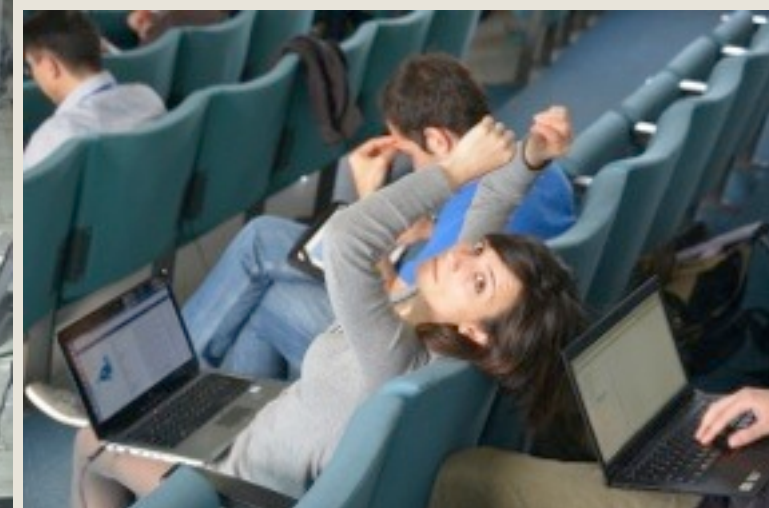
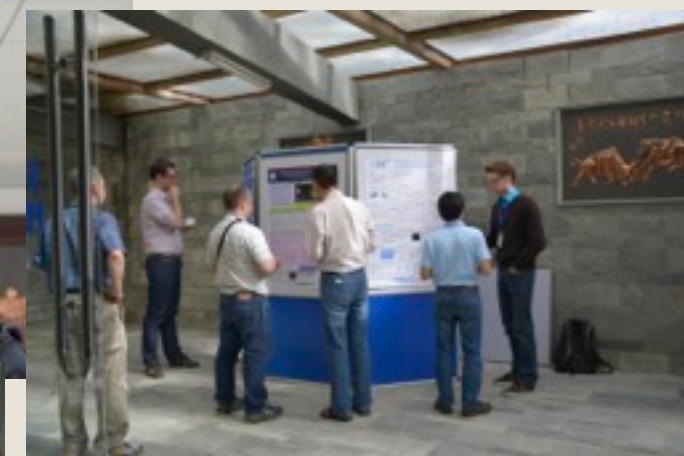
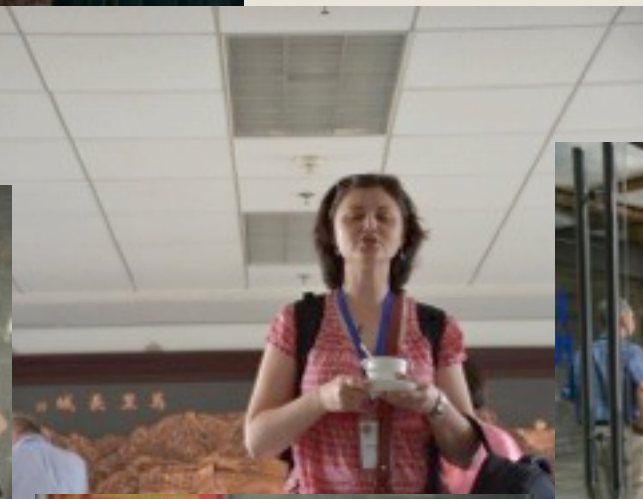




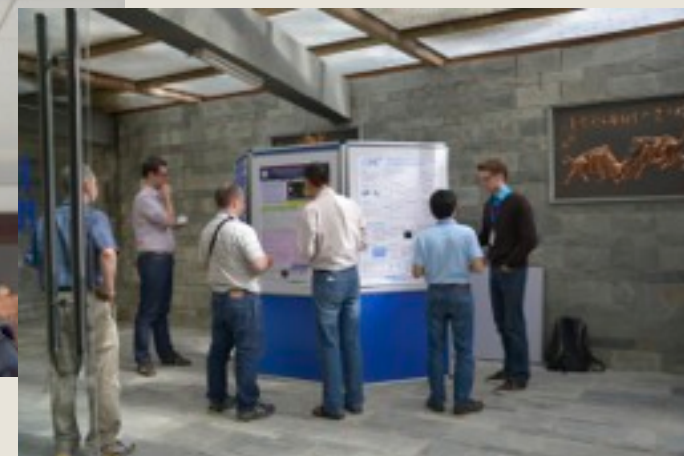
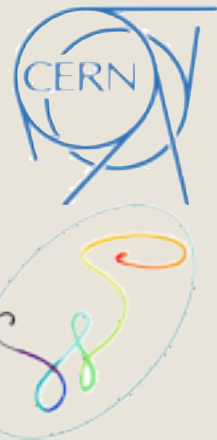




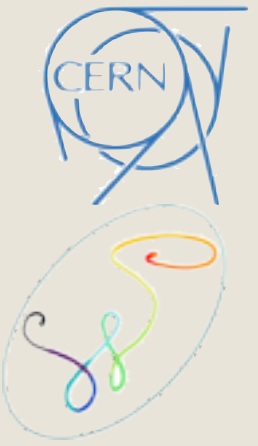
















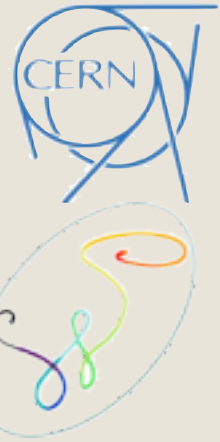










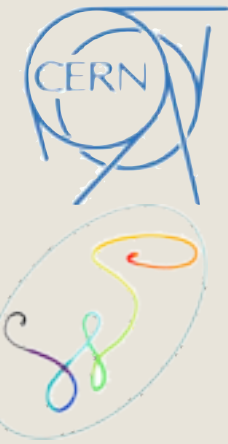
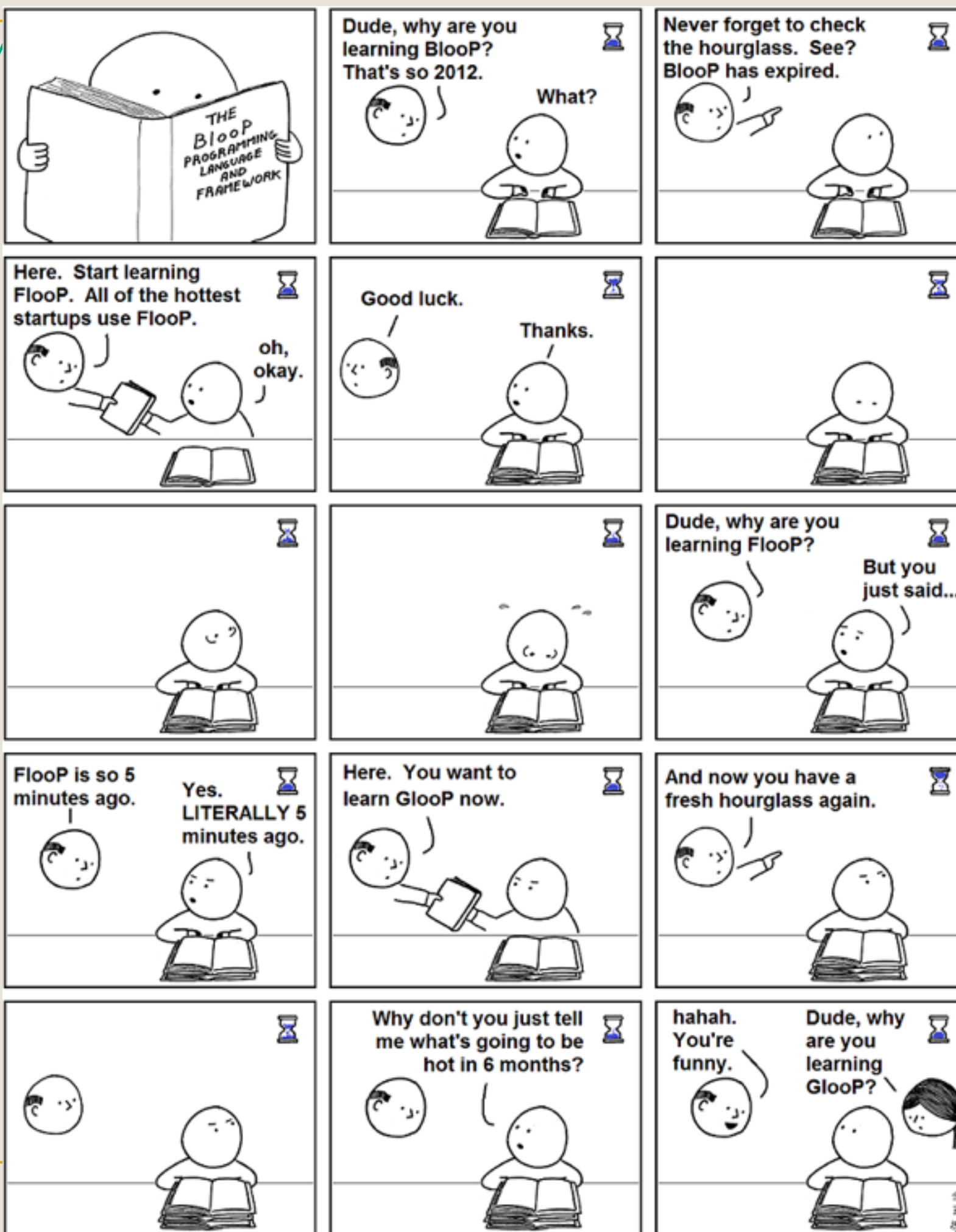


# What to bring home: T1

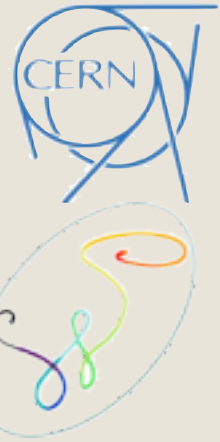
- Moore's law is dead, long live Moore's law!
  - How to exploit the new “animals” and be “future compatible”?
- Any new language looming?
- How to marry Big Data and HPC?
  - And move from Grid to Cloud? (whatever that means)
- How to deal with increasing complexity?
  - Too many solutions and problems not well defined
  - New hardware and new software
- Interdisciplinarity?
  - It is good to talk about it but...
- Can we still have “generic code” and “generic libraries”?
- Virtualisation
  - Is the hype gone?
- Will we bite the HPC bullet finally??











# What to bring home: T2

- Still more innovation in analysis techniques
  - Finally getting out of the “square cuts”
  - Automated matrix element methods, Neural Networks, Deconvolution, Fitting, TMVA
- Trigger algorithms
- Frameworks
- Many other new stuff
  - CAD+GEANT, Monalisa new functionality...
- Some real successes in optimisation
- Exciting innovations, almost a new life into this time honored area
  - Almost if LHC had broken a “stalemate” and evolution is now accelerating





# What to bring home: T3

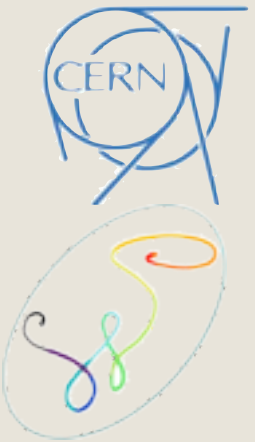
- Well beyond my field of expertise!
- NLO automation
  - And jet calculation
- Formal manipulations programs continue their spectacular development
  - FeynRules, FormCalc, Form, SecDec
  - Direct computational methods
- Multiple loops calculations
  - 6 loops and more?
- Again we see the “push” of LHC data







# The round table



- Very interesting discussion on Open Source
- This is a topic that, coupled with Data Preservation, will increase in importance
  - First presented at ERICE in 2008
- I would propose to make of it a “standing topics” for ACAT



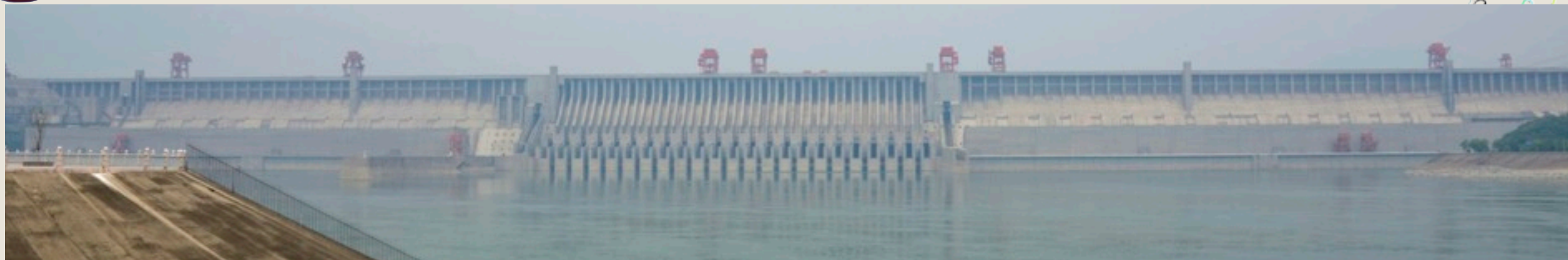


# The Big Picture





# The Big Picture



- From 1960 to ~1990 we were happy with FORTRAN and did not know anything else



# The Big Picture



- From 1960 to ~1990 we were happy with FORTRAN and did not know anything else
- 1990~2002 were the soul-searching years
  - *How could you possibly propose a promotion for someone who is supporting ROOT?!*





# The Big Picture



- From 1960 to ~1990 we were happy with FORTRAN and did not know anything else
- 1990~2002 were the soul-searching years
  - *How could you possibly propose a promotion for someone who is supporting ROOT?!*
- From 2002 to date people sat down and wrote programs
  - With “mixed results”
  - *No experiment ever failed for its software. S.Ting*
  - *Yours is not the question why, yours is do or die*



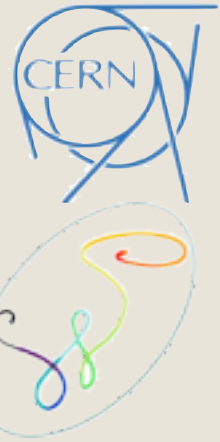
# The Big Picture



- From 1960 to ~1990 we were happy with FORTRAN and did not know anything else
- 1990~2002 were the soul-searching years
  - *How could you possibly propose a promotion for someone who is supporting ROOT?!*
- From 2002 to date people sat down and wrote programs
  - With “mixed results”
  - *No experiment ever failed for its software. S.Ting*
  - *Yours is not the question why, yours is do or die*
- Now doubts are seizing us again
  - Which is GOOD!







# And ACAT



- I have to say that this year I found the “old ACAT” spirit
  - Not comprehensive (and diluted?) as CHEP, but stimulating and provocative
- I believe that ACAT can play an important role in this new phase of doubts and “all directions” exploration
- Beijing ACAT has announced this transition and I am very happy about it
  - I think this ACAT has been a success



# The Conspirators







**Giordano Bruno**



**Johannes Kepler**



**Christian Doppler**



**Ernst Mach**



**Bernard Placidus  
Johann Nepomuk Bolzano**



**Albert Einstein**



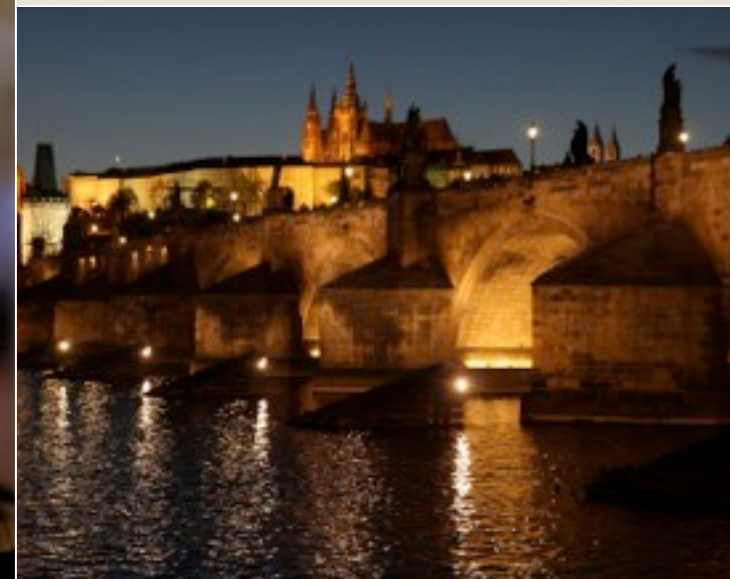
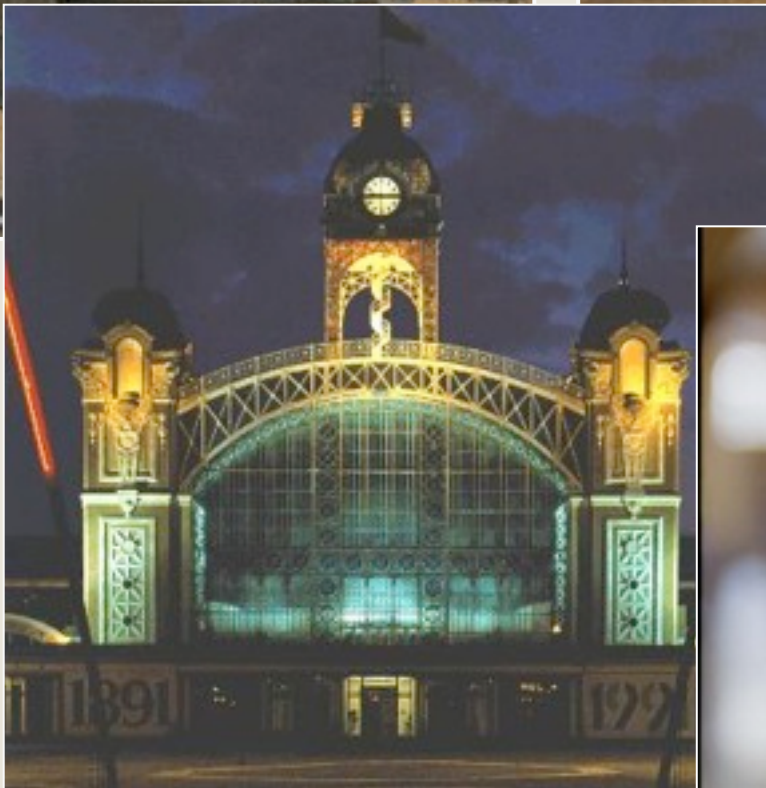
**Tycho de Brahe**



**René Descartes**

















# The adventure continues





# The adventure continues







Thank you!

