



INFN

*Fernando Ferroni*

*INFN @ Sapienza Universita', Roma*



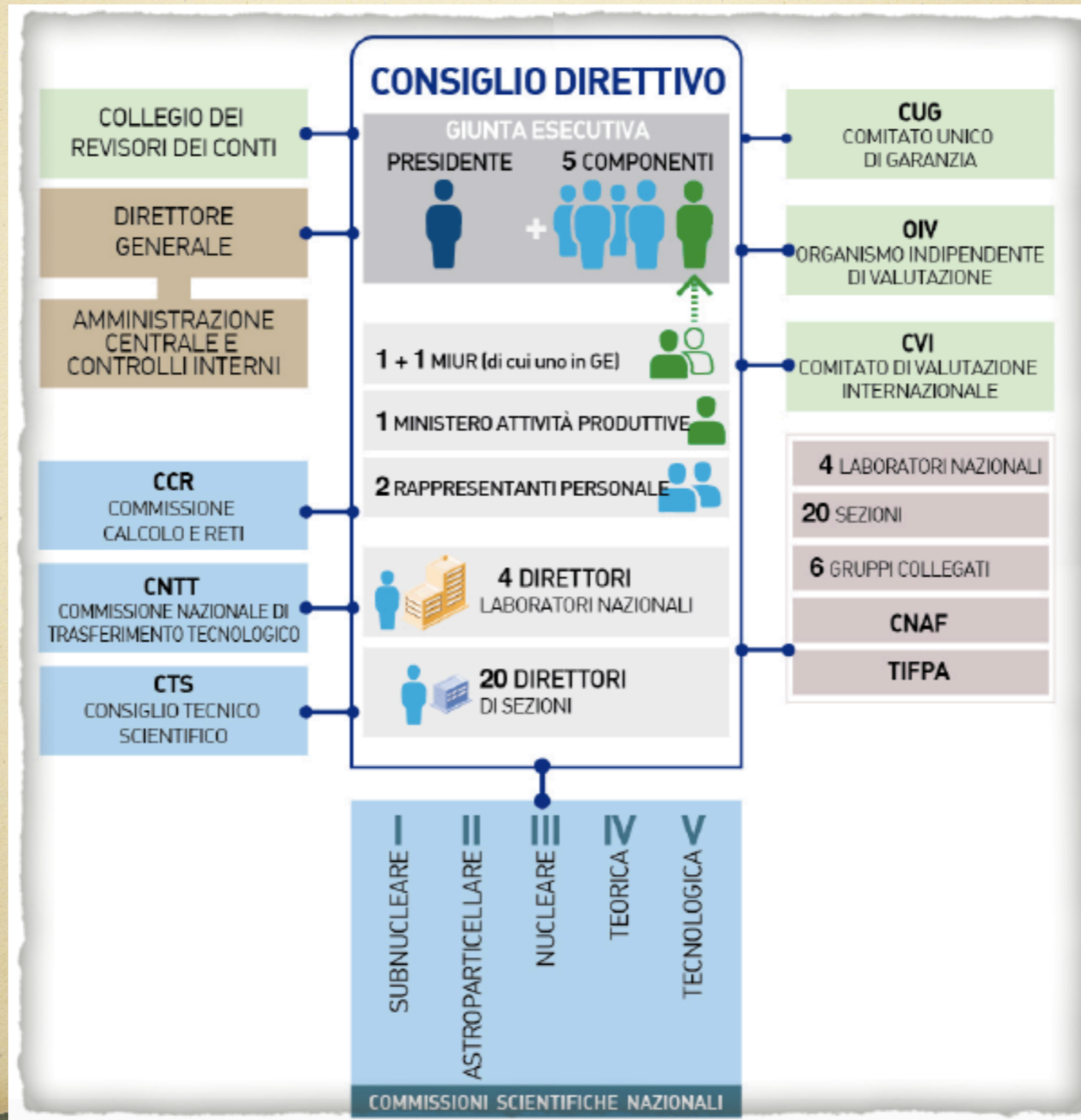
Benvenuti a bordo



# una lunga storia e qualche evento chiave

- fondato da E. Amaldi (8 Agosto 1951) **Roma-Padova-Torino-Milano**)
- basato su una completa sinergia con l'università
- strutturato in laboratori nazionali, sezioni e centri (LNF 1955, G. Salvini)
- a Frascati il Sincrotrone (1959), AdA (1961), Adone (1967), Dafne (1997), SPARC\_LAB (ora)
- LNL nel 1960, LNS (1976)
- **Laboratori Nazionali del Gran Sasso** (intuizione del Prof. A. Zichichi) 1984 il più grande laboratorio underground del mondo e il più internazionale dei laboratori INFN oggi dedicato alla ricerca della materia oscura, a comprendere la natura del neutrino e a compiere ricerche di astrofisica nucleare
- il Gran Sasso Science Institute (2012), una scuola di dottorato fatta nascere e svezzata dall'INFN. Dal 2016 scuola superiore universitaria








# con una catena di comando democratica e unica in Italia



# Istituto federale



## INFN Structure:

-  Units in Physics Dept's (20)
-  smaller units (no T/A staff) (11)
-  National Labs (4)
-  TIFPA
-  GSSI
-  Tier 1 Computing Center and IT
-  EGO

# Completamente integrato con l'Università'

DG  
 Researcher  
 Engineers  
 Tech  
 Administration  
 Post-Doc

Researcher (full time)  
 Engineers  
 Researcher (part time)  
 Ph. D. students, Post-Doc

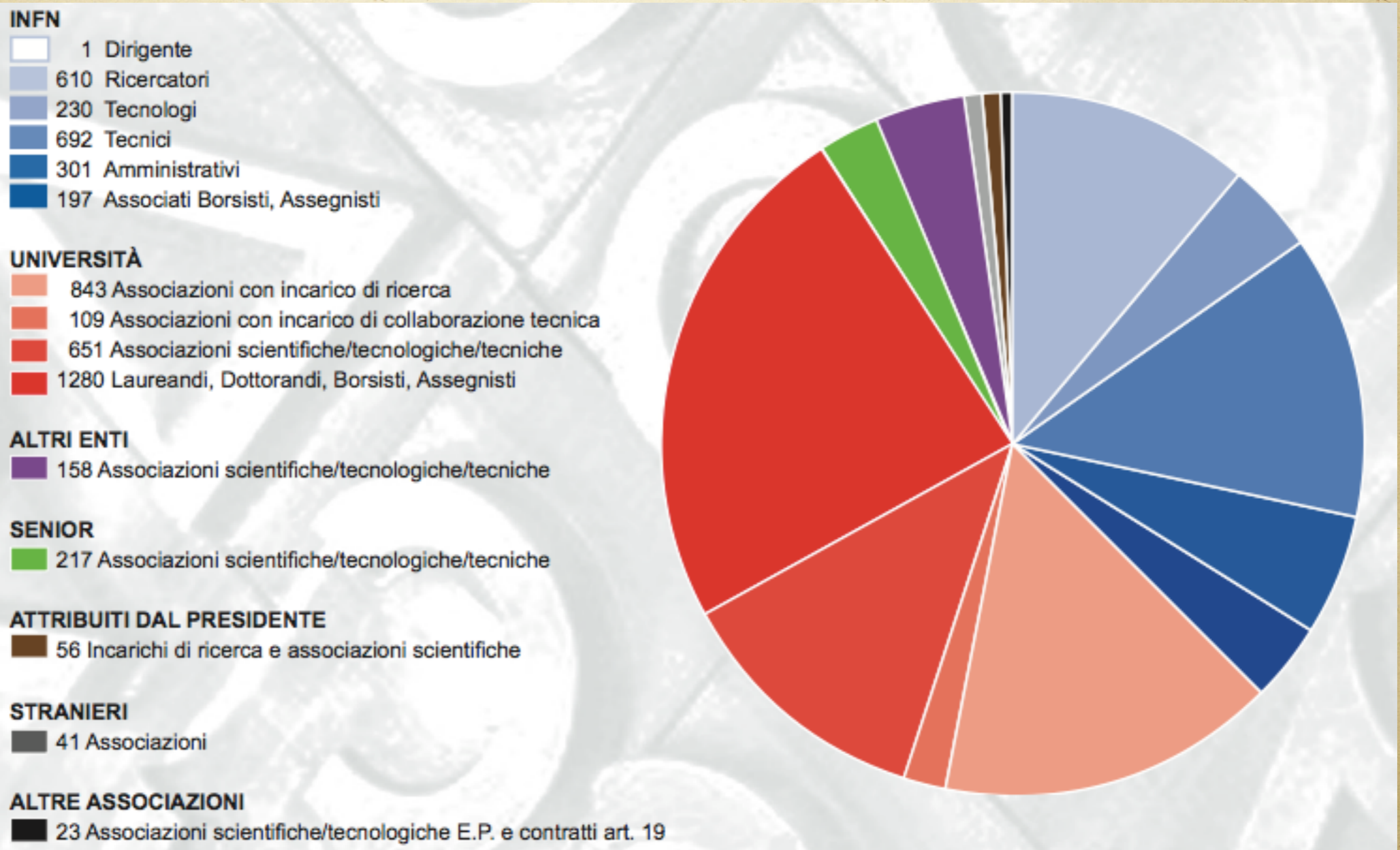
Researcher (part time)  
 from other Research  
 Institutions

Retired (still active)

Senior (emeritus)

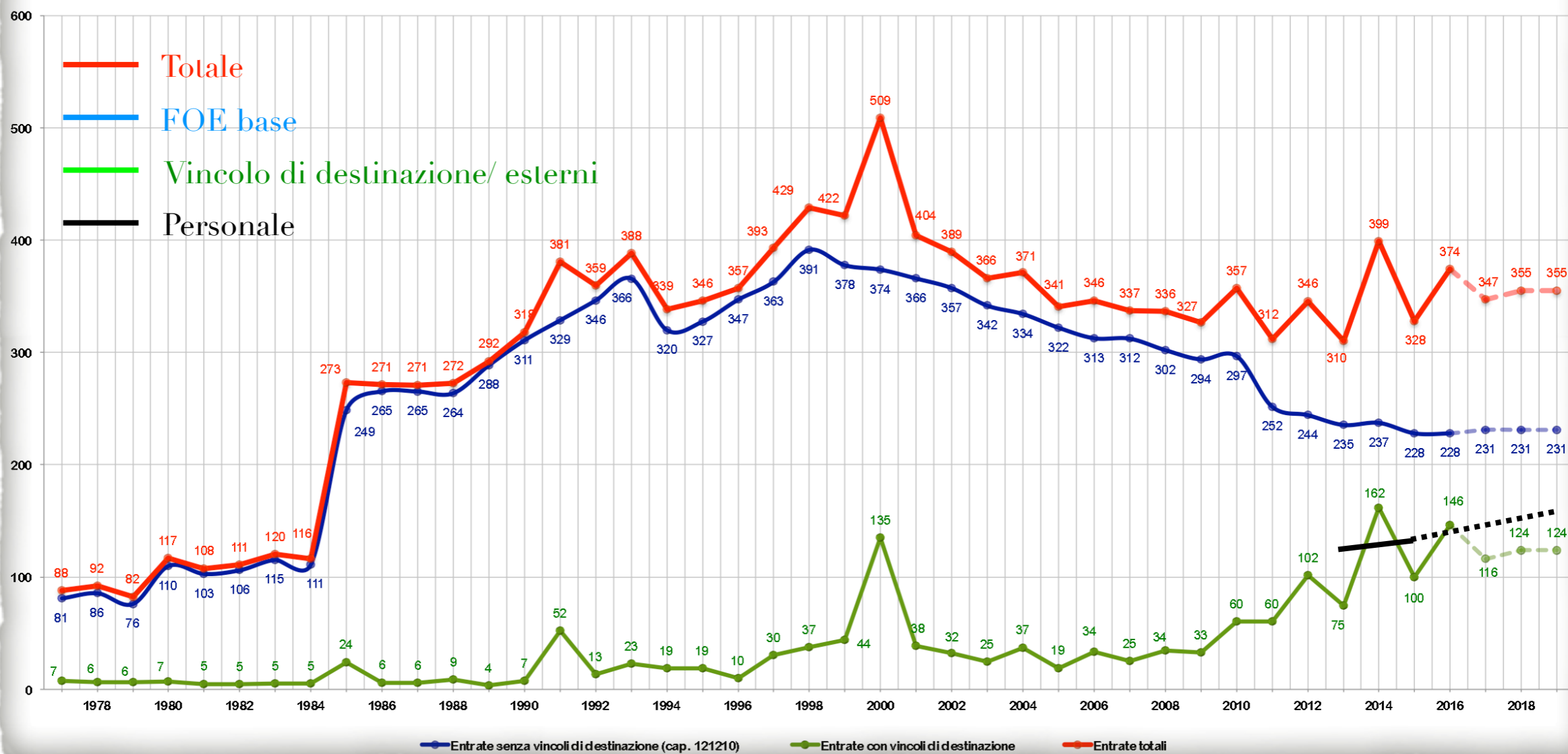
Foreigner Institutions

Others (unexplicable !)



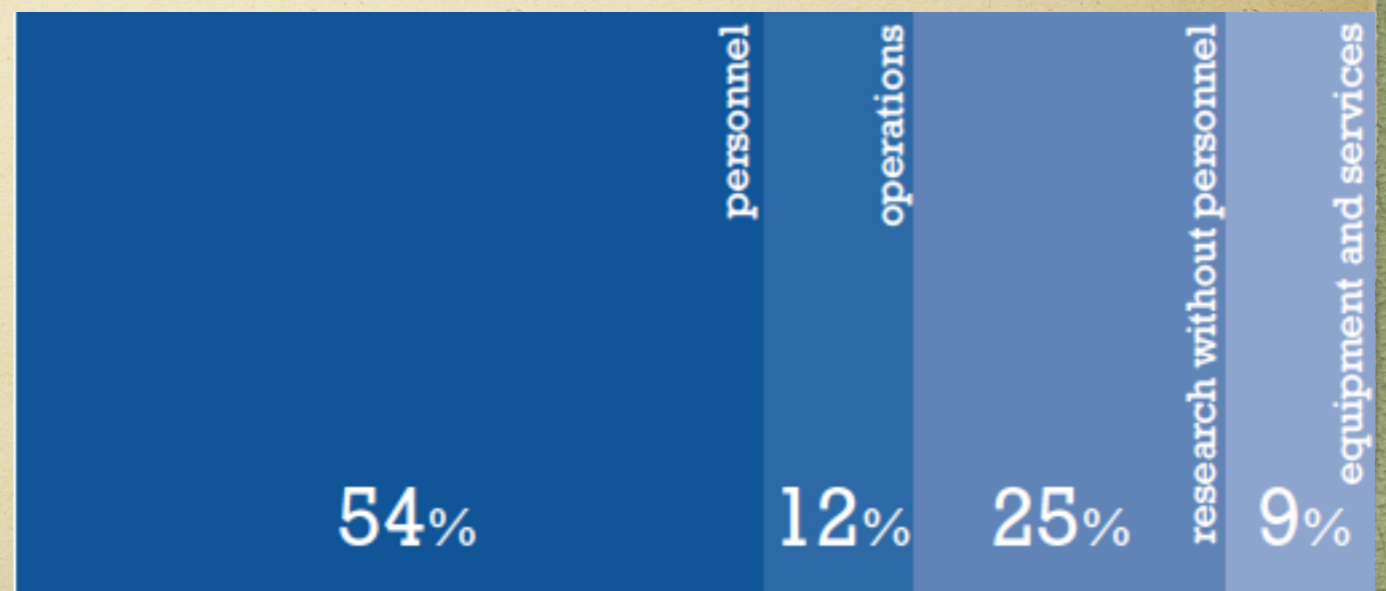
# con un budget complesso

Serie storica delle Entrate secondo il vincolo di destinazione  
a prezzi costanti 2016 (milioni di euro)  
Fonte: Bilanci Consuntivi



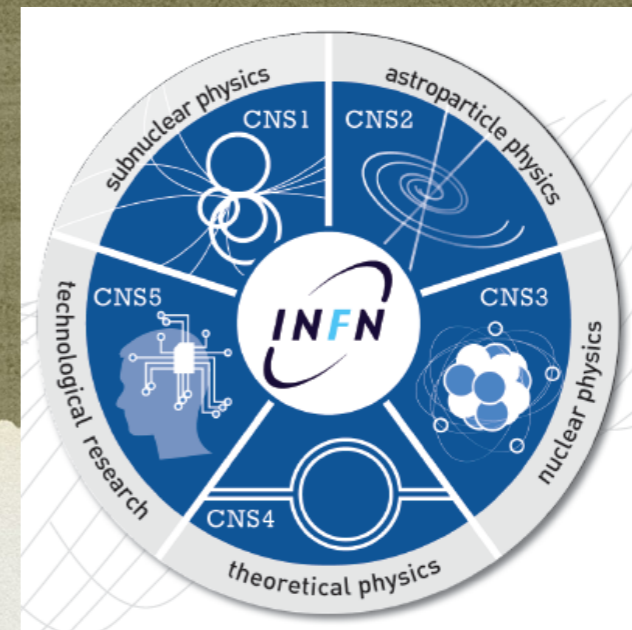
# composto da pezzi differenti

- Salaries : 135 ME
  - Research direct costs : 50 ME
  - Infrastructures & operations: 60 ME
  - 'Other' projects (this money does not commute with anything else): 90 ME
- It is composed by few different pieces
  - Its total is around 330 MEuro
  - The 'unlabeled' part is about 240 MEuro
  - Then there are 'premium projects', special projects, external funds.....in variable proportions





# LINEE DI RICERCA

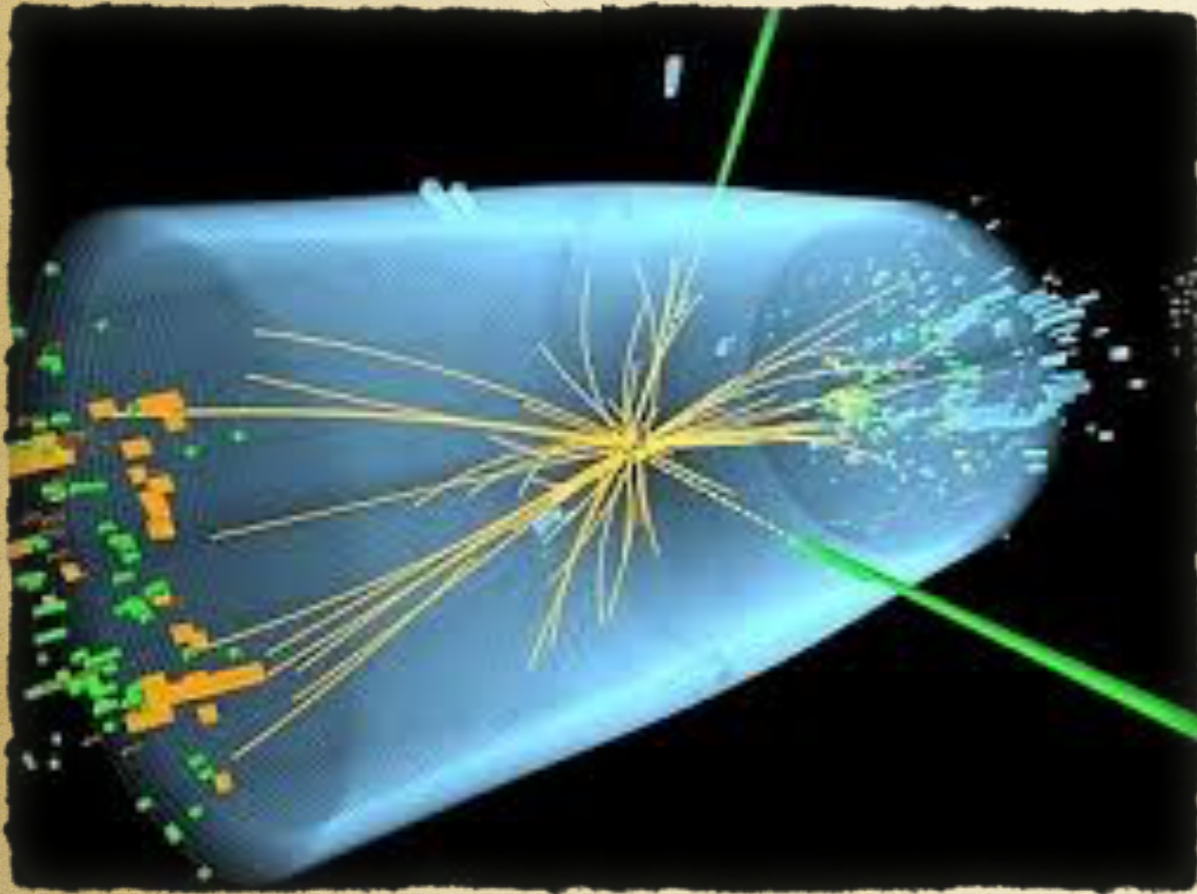


- Particle Physics (with accelerators) (20.5 ME)
- Astroparticle Physics (includes all  $\nu$ ) (14.7 ME)
- Nuclear Physics (includes ALICE) (9.8 ME)
- Theoretical Physics (2.9 ME)
- Research & Development (+Accelerators) (5.1 ME)

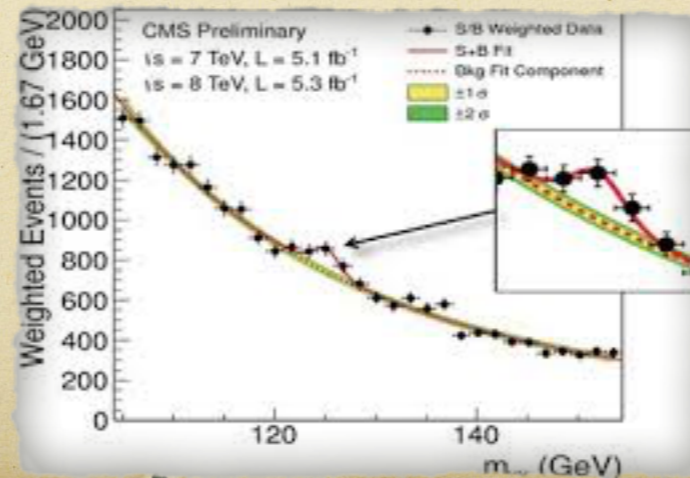
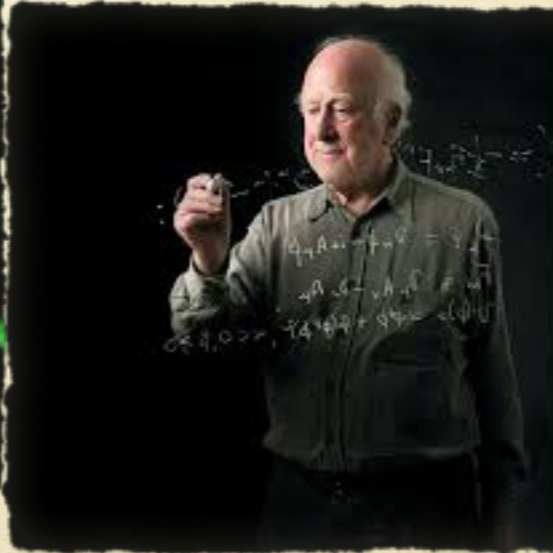
# Research curiosity driven (a sample of activities)

- at CERN where INFN is leader in technology and experiment's leadership
- at LNGS , the largest underground lab in the world
- at EGO-Virgo by studying gravitational waves
- at KM3Net in the depth of the Mediterranean sea to intercept neutrinos from the violent phenomena far in the cosmos
- and in many other labs

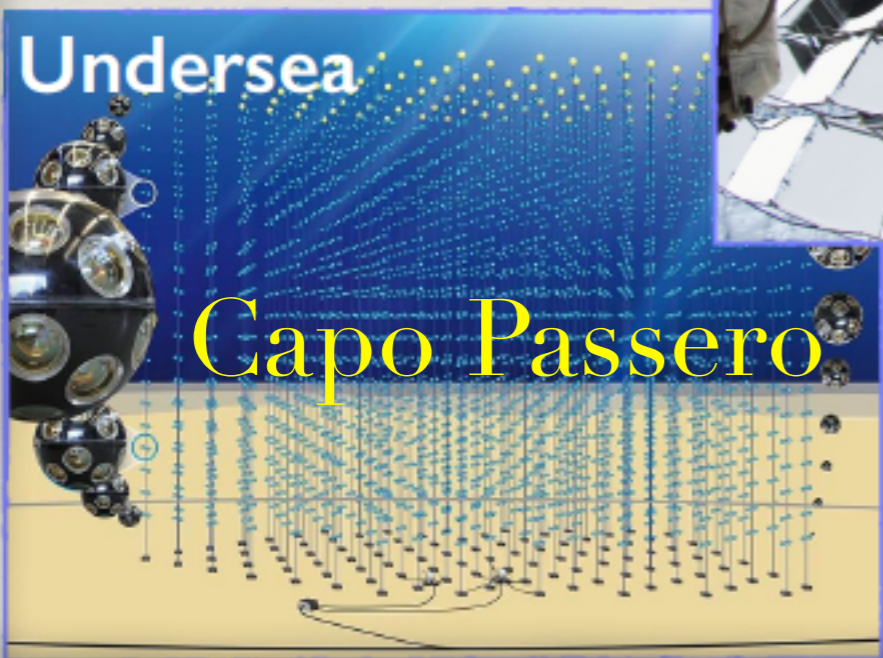
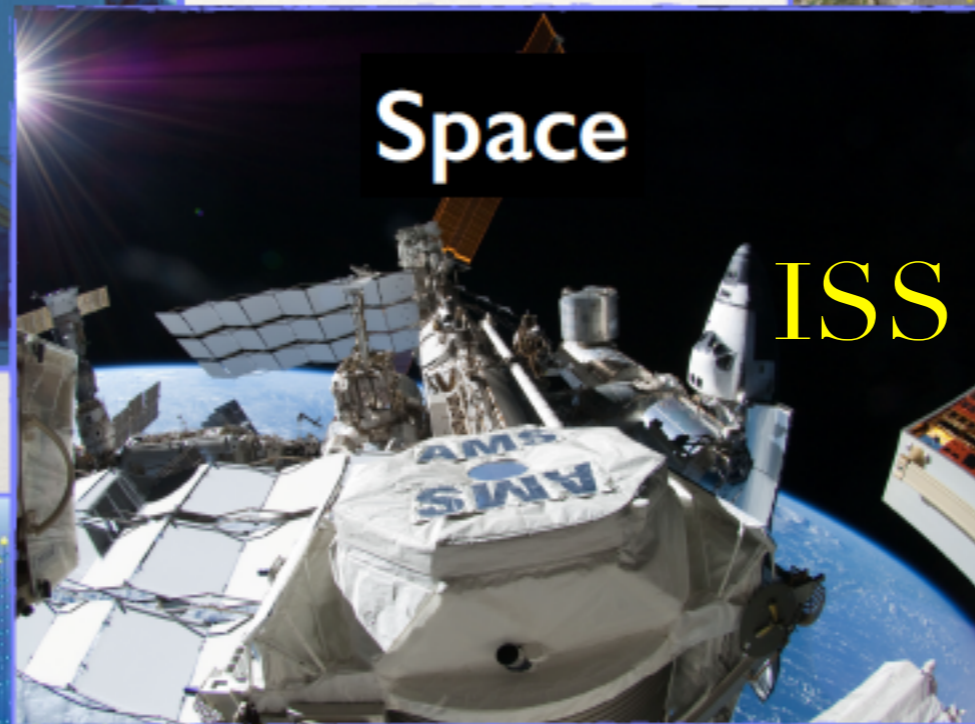
# just a flash on CERN



## Higgs



# in the sky, on earth and almost everywhere



# Out in the world where we contribute with INFN technology mostly transferred to industry

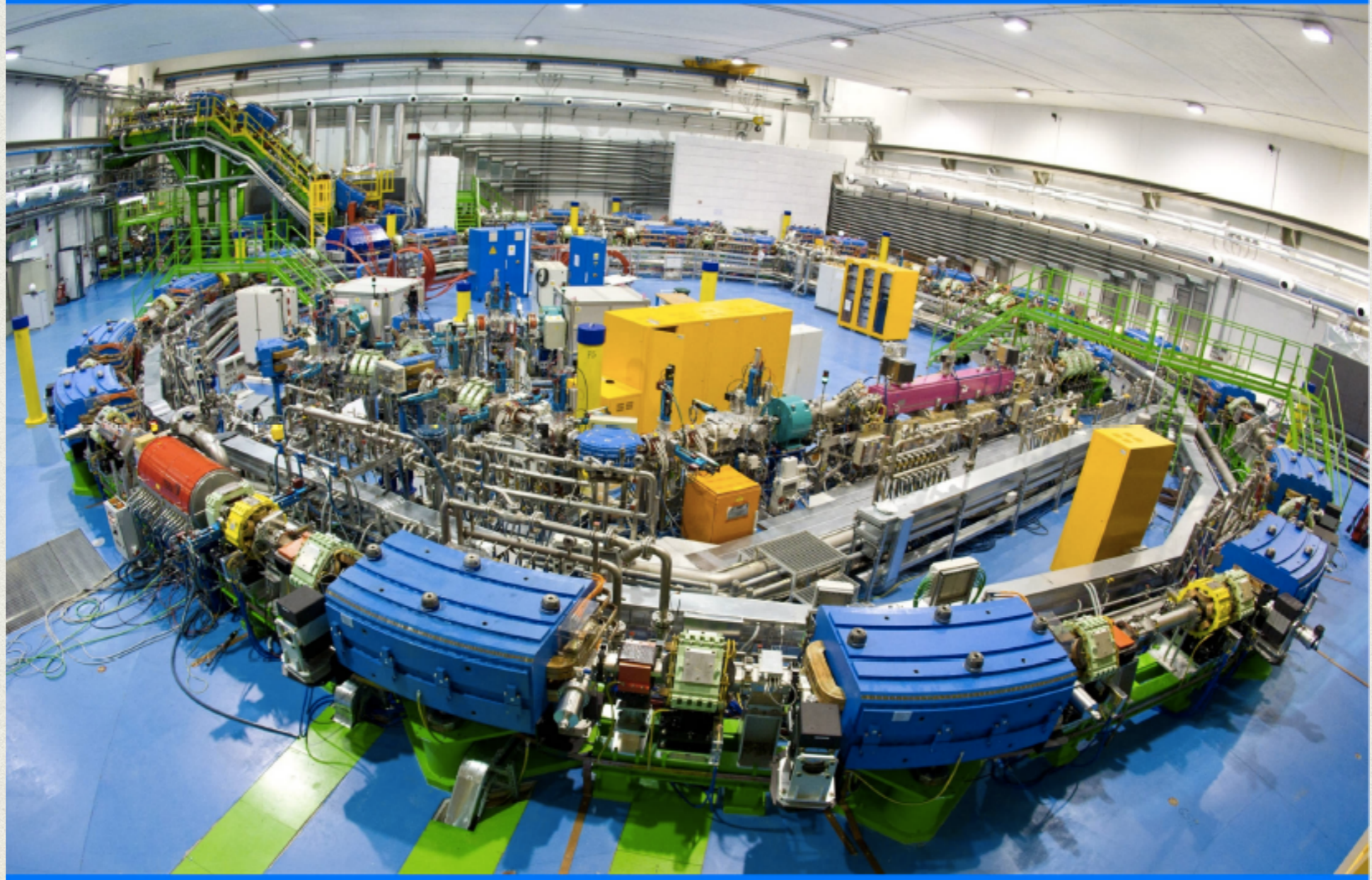
- European X-FEL (Amburgo) [italian director] (Zanon)
- European Spallation Source (Lund) (Zanon)
- European Synchrotron Radiation Facility (Grenoble) [italian director]
- Fermilab (Chicago) (Zanon)
- ELI-NP (Bucharest)
- SESAME (Amman) [italian director] (Cinel)
- LCLS-II (Stanford) (Zanon)
- FAIR (Darmstadt) [italian director]
- NICA (Dubna) (ASG)
- CERN [italian director] (ASG, CAEN, Zanon.....and many others)
- .....

# A NEW CENTER FOR ION THERAPY



# CNAO IN PAVIA

The synchrotron for protons and carbon ions



# freedom of research

- but remember the budget plot.....no extra money, no party
- aim to become an independent researcher with the goal of directing your own research, your own group
- we want to help you !



# a starting grant

- of 20 kEuro
- for your project (to start on January 1, 2018)
- to be spent in 2-3 years
- with the aim to become competitive on the big market of grants (ERC as a primary example but not limited to)
- a report will be filed at the end

# CONCLUSIONS

- The 'ballistic' science is robust and giving fruits
- Need to prepare for a future more diversified and yet as robust as the present

# DISCUSSING THE FUTURE

what  
NEXT?



7-8 April 2014

Angelicum - Roma

700+ people

what  
NEXT?



Angelicum  
16-17 febbraio



What Next 2016



# Conclusion

- A very well defined scope pursued with coherence
- A self-governed institute, proud and enthusiast
- A continuous attention to applications that might benefit the society