Dapnia

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saclay

Laboratoire de recherches sur les lois fondamentales de l'Univers

Laboratory of research into the fundamental laws of the Universe

A department of the physics division (DSM) of CEA in Saclay

Dapnia: Human resources and budget

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- About 200 physicists
- About 430 engineers, technicians and staff
- About 130 post-docs, PhD students and other visitors

- Budget: about 85 M US $

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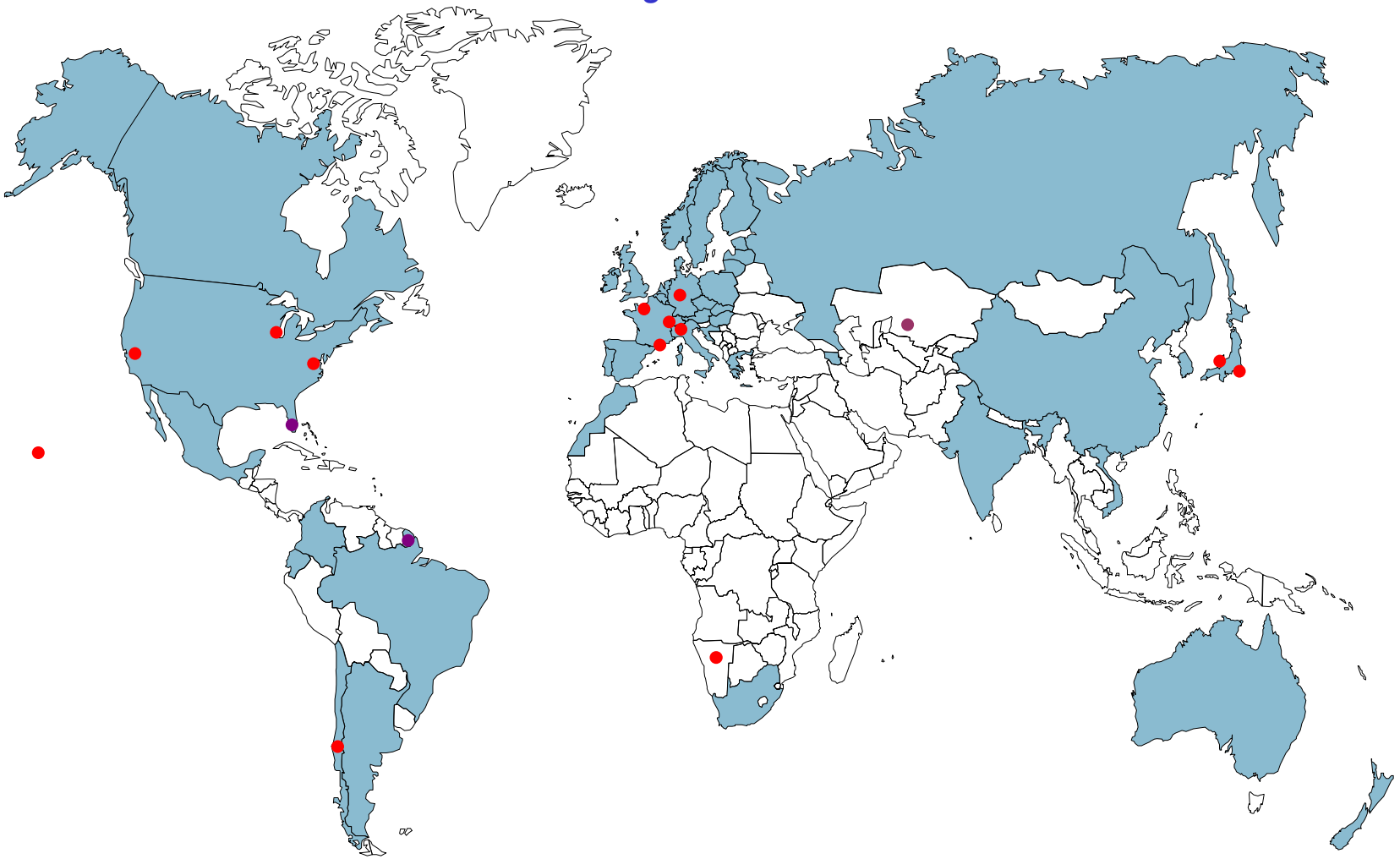
International programs:
collaboration with other french and foreign laboratories



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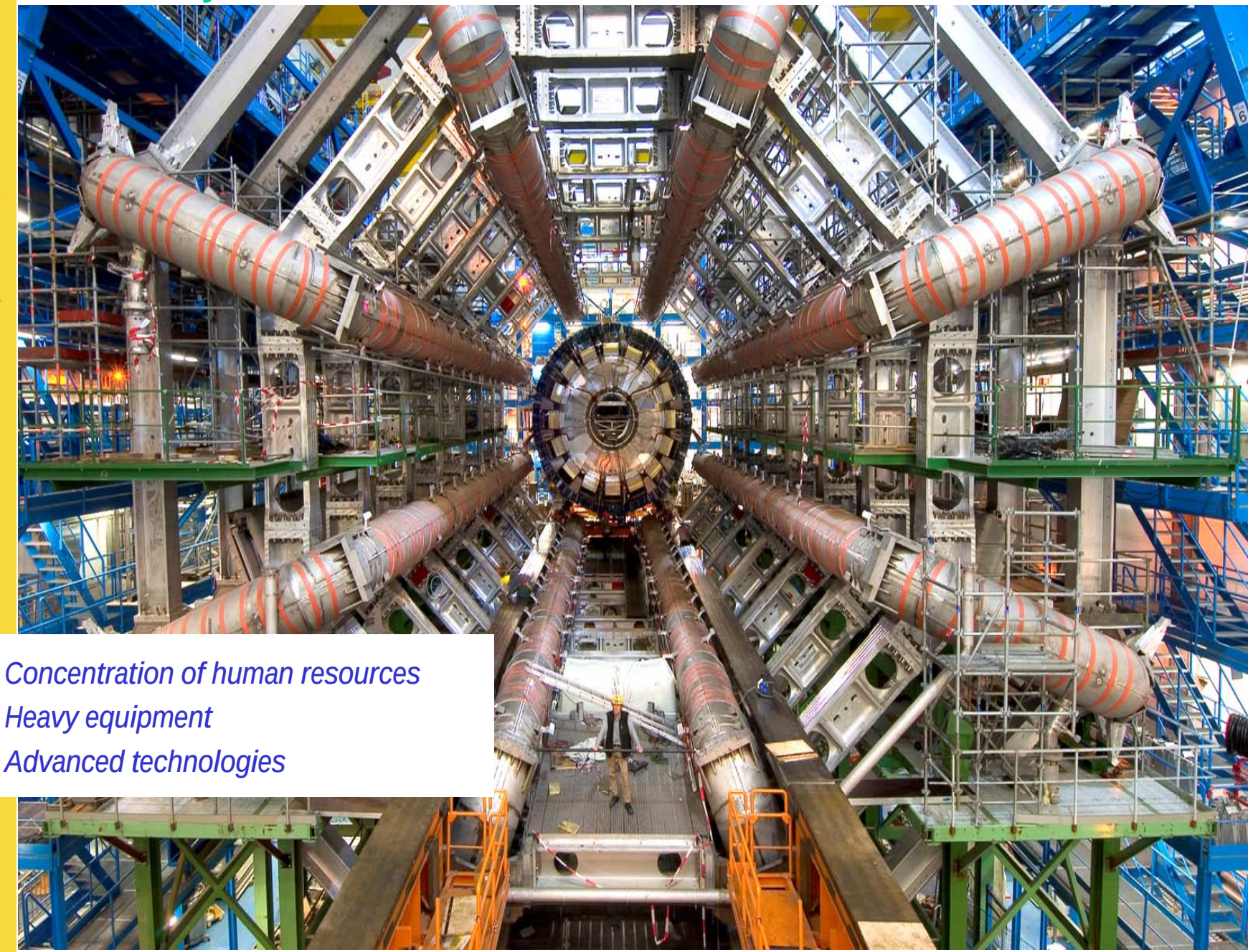

Concentration of human resources

Heavy equipment

Advanced technologies

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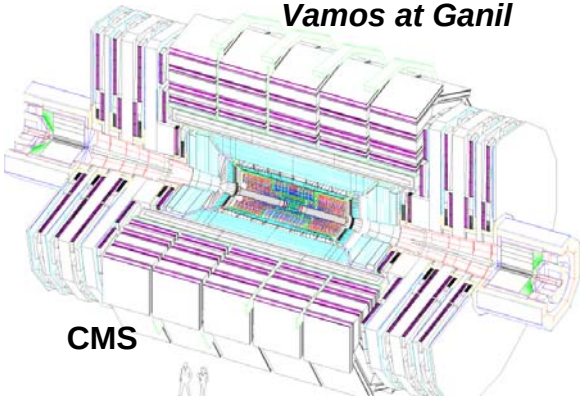
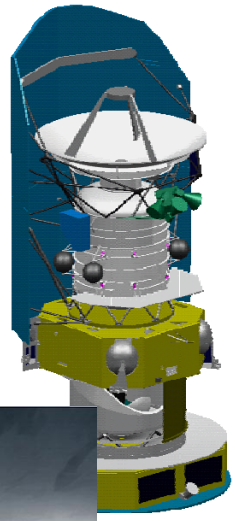
Project oriented organization, inside CEA, a technology dominated institution

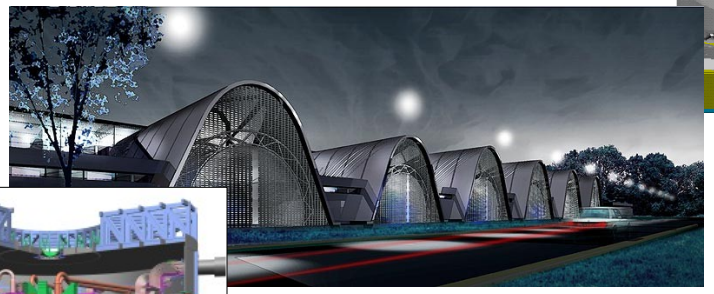
Vamos at Ganil



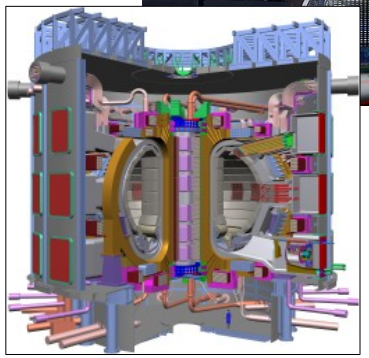
CMS

Herschel





Neurospin



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Eight globally consistent and ambitious research programs:

Ultimate constituents of matter

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Tests and extensions of the Standard Model: in particular, the Higgs particle and the origin of masses

Neutrinos oscillations

The nucleon structure

SuperKamiokande detector in Japan :
T2K experiment, neutrino oscillations

The energy content of the Universe

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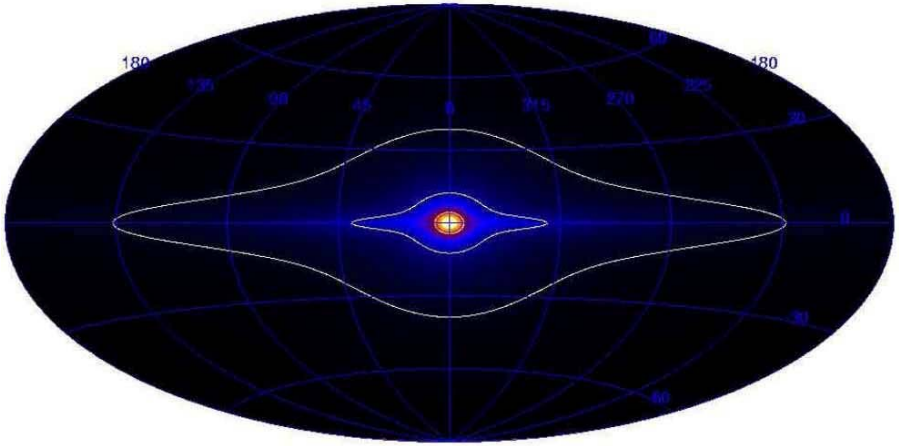
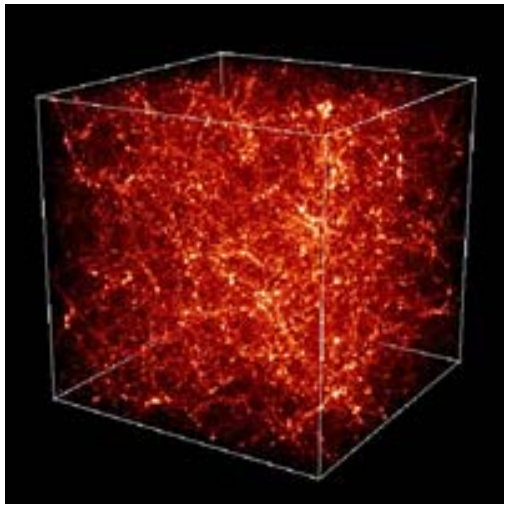
Antimatter disappearance and CP violation

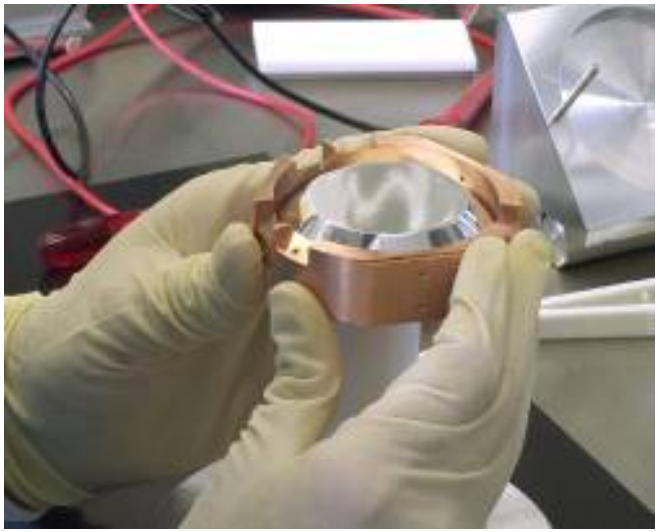
Dark matter, dark energy and cosmology



Integral :

Antimatter in the Galaxy





Edelweiss :

Search for dark matter

Structuration of the Universe

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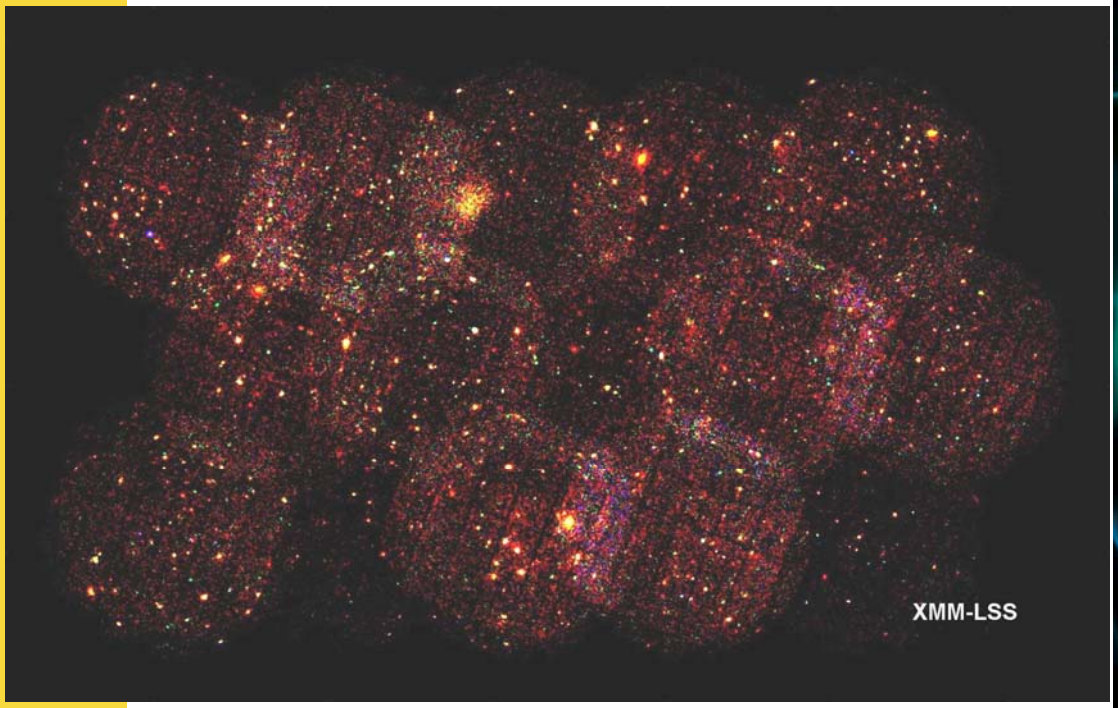
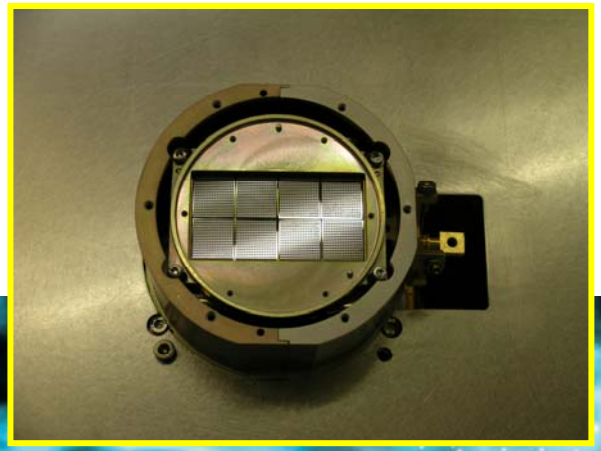
Cosmology and formation of large structures in the Universe

Formation and evolution of galaxies

XMM-LSS :

7 billion years ago



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CASTOR 02
TOULON
SCHOTTEL
ANTARES

Extreme states of nuclear matter

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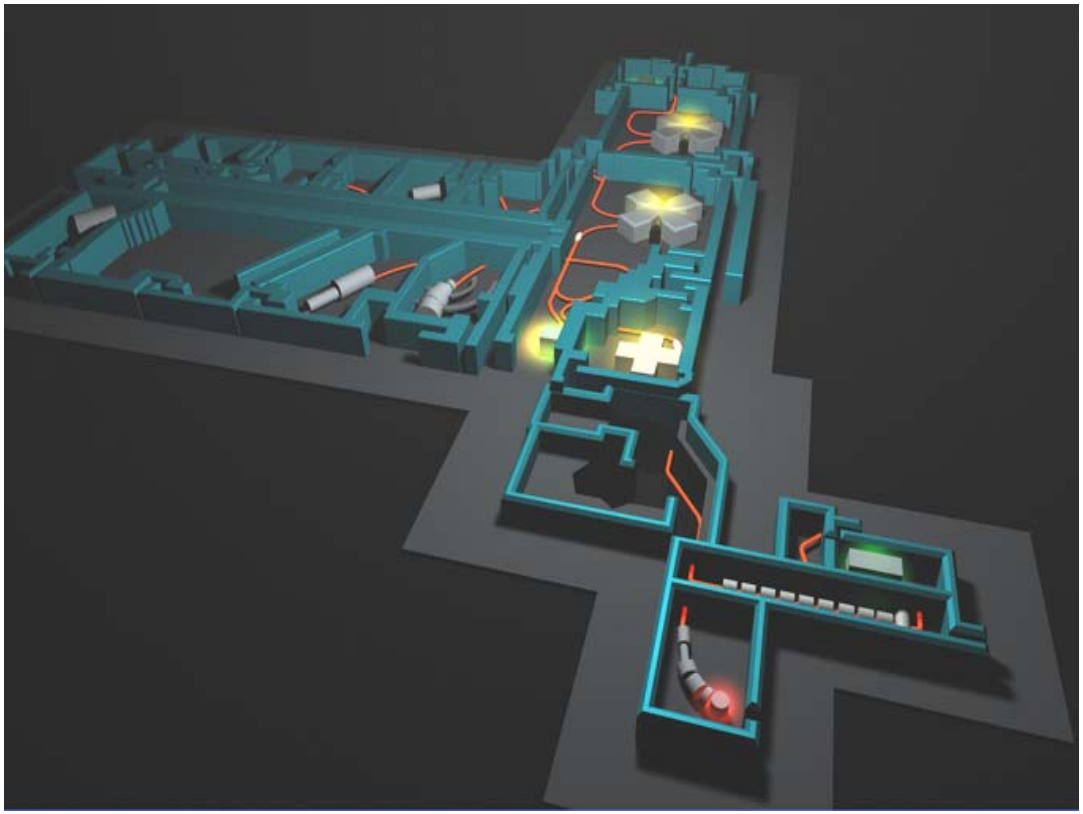
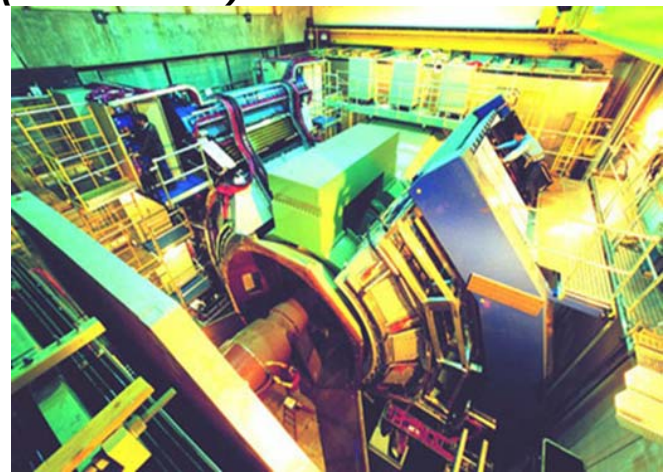
Exotic, super-deformed, with halos… nuclei

Phase transitions in nuclear matter: Quark and gluon plasma

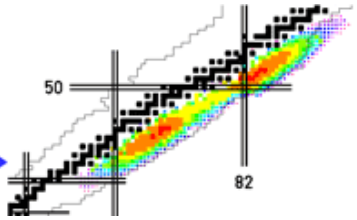


PHENIX** detector **at RHIC

(Brookhaven)



Spiral2



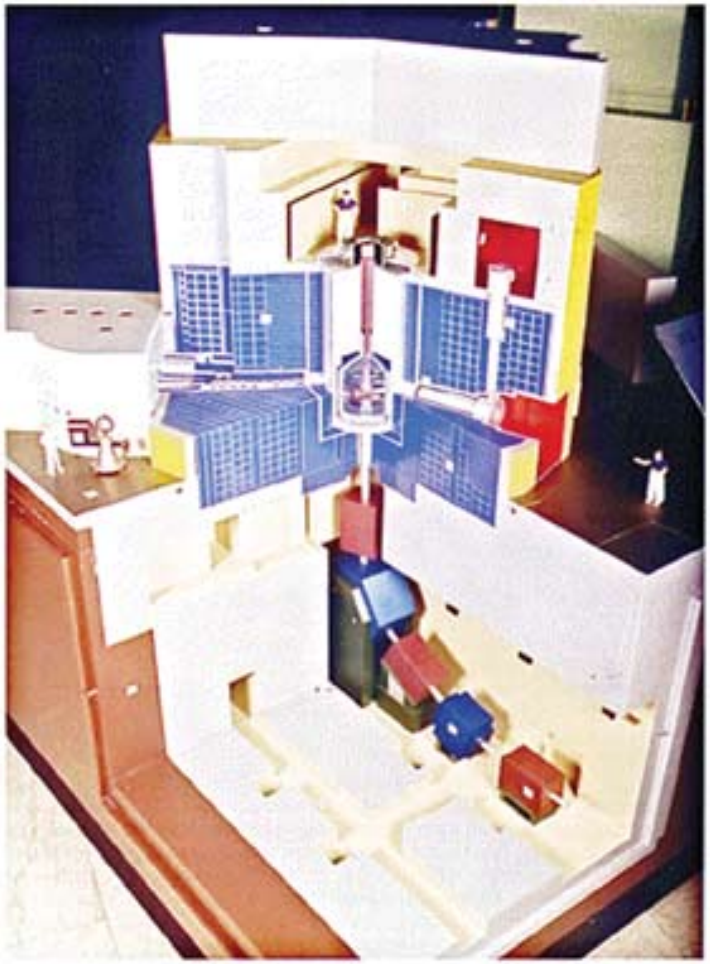
Physics for nuclear energy

Neutronics

Basic nuclear data

Transmutation studies

Fusion



Neutron spallation source Megapie at PSI.

Futur instruments for physics

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New, improved detection systems

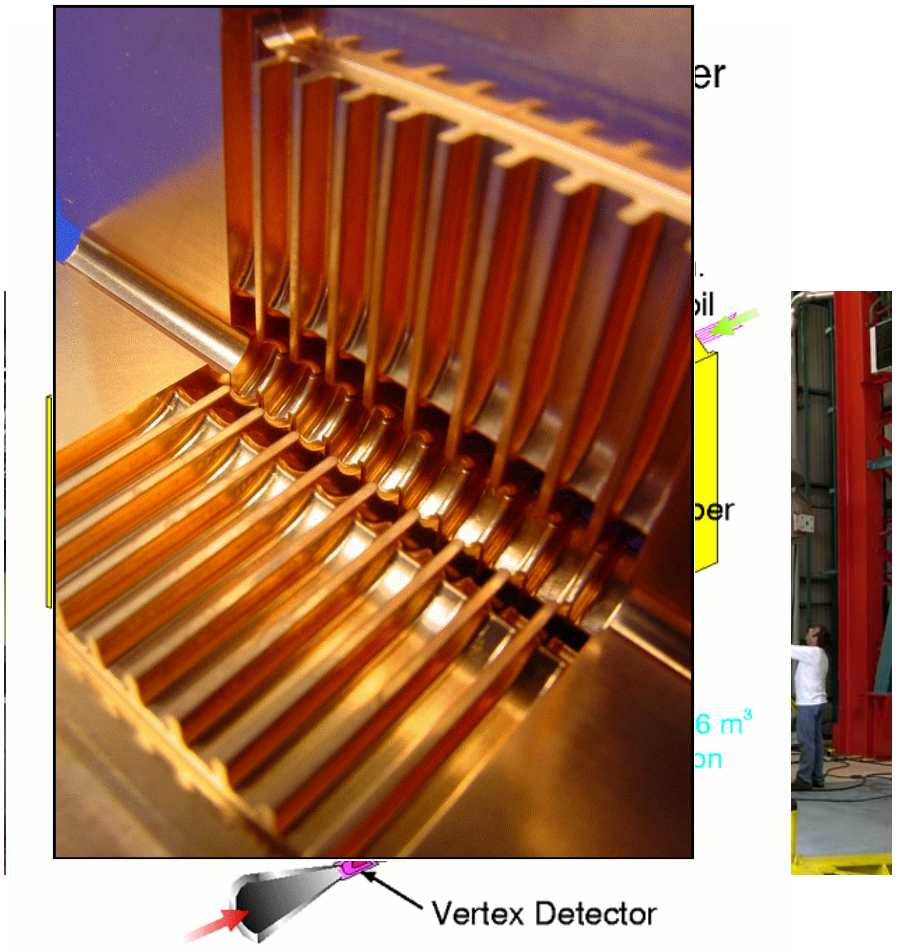
Signal processing and software

R&D in process control

Future particle accelerators

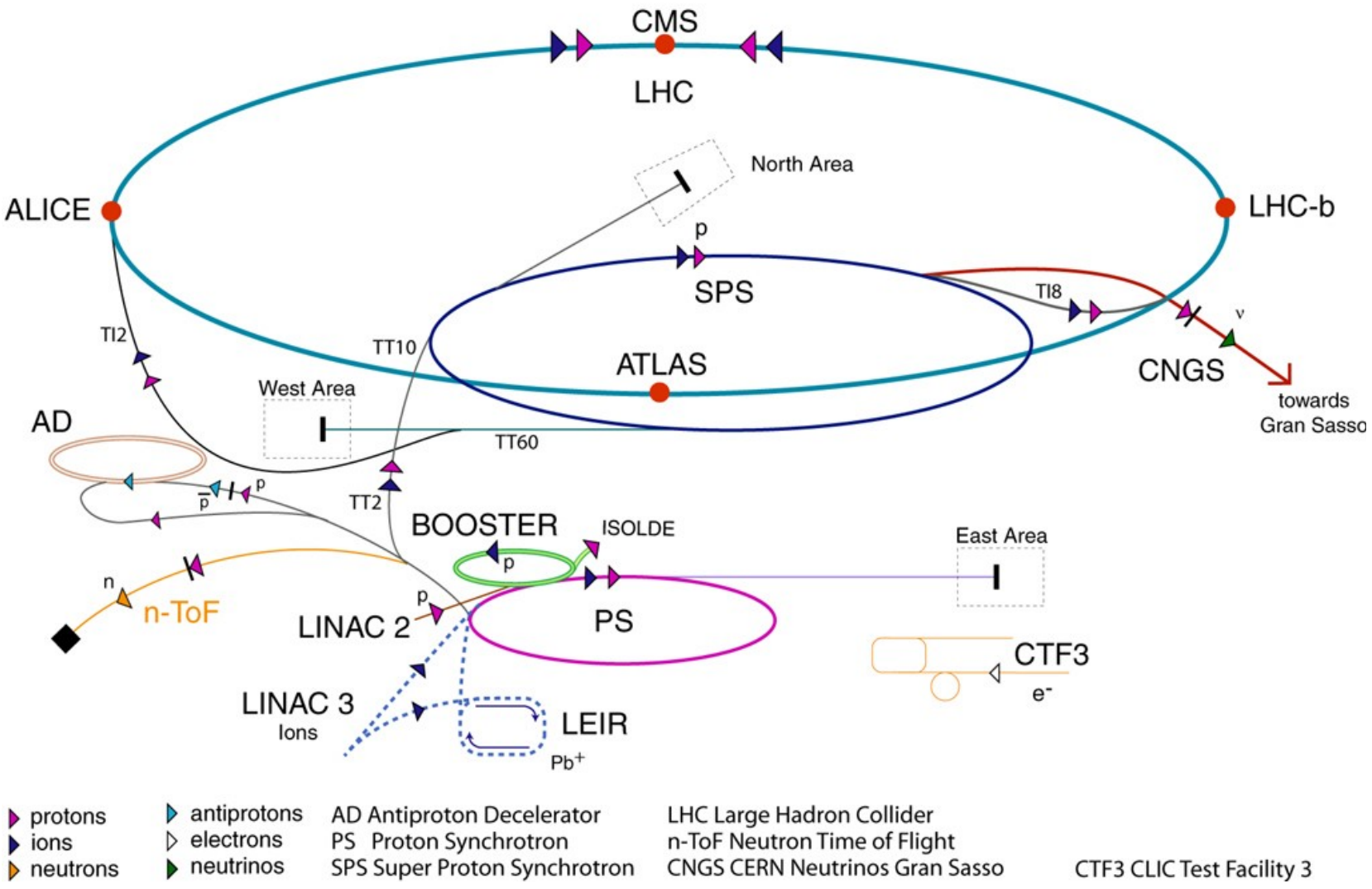
Superconducting magnets

Cryogenic test stations



Futur instruments for physics

LINAC4 , CTF3 (CLIC), Superconducting magnets for LHC, CARE…



Applications and developments for other communities

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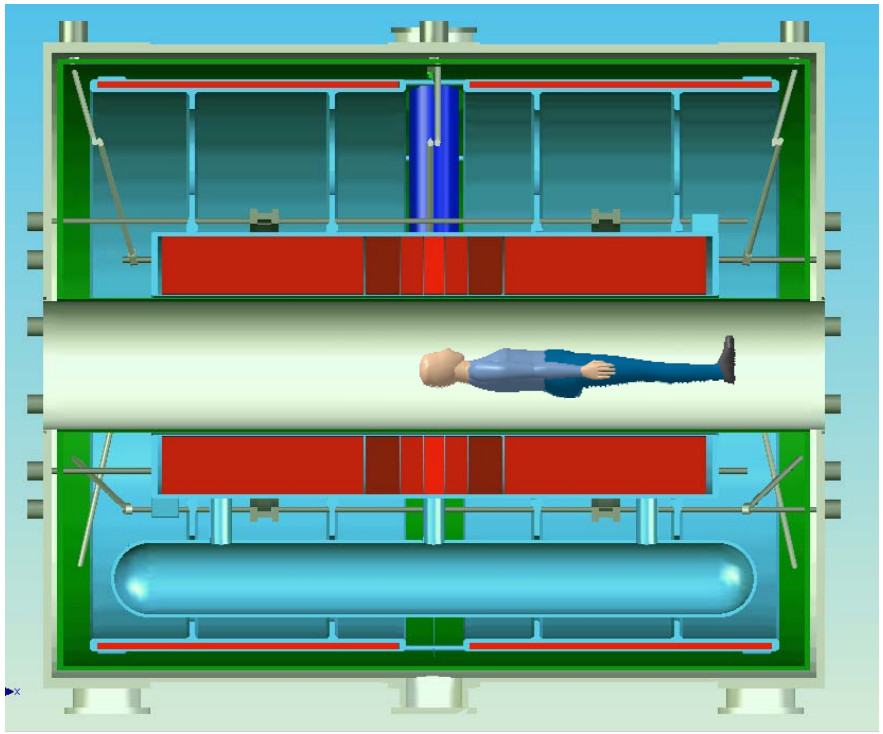

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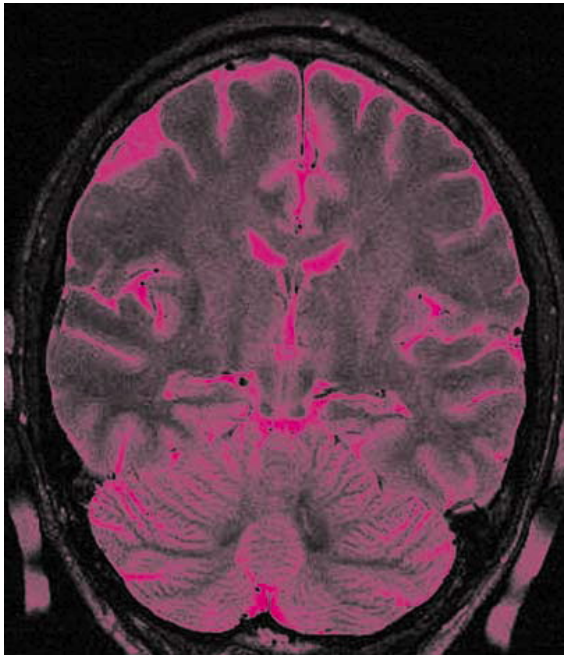

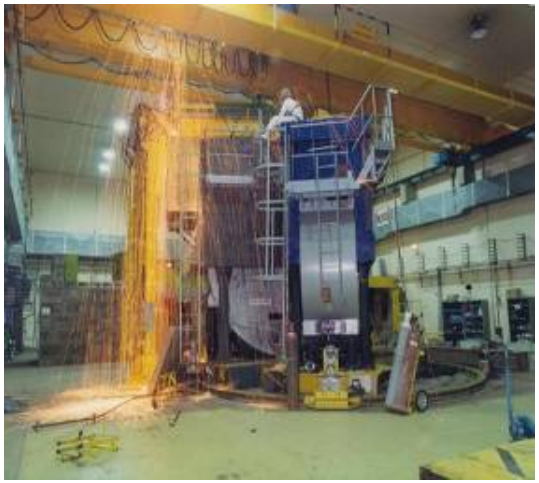

Physics and medecine

Accelerator technologies

Dismantling large physics instruments

Soleil cavities