

Saclay - 50 years

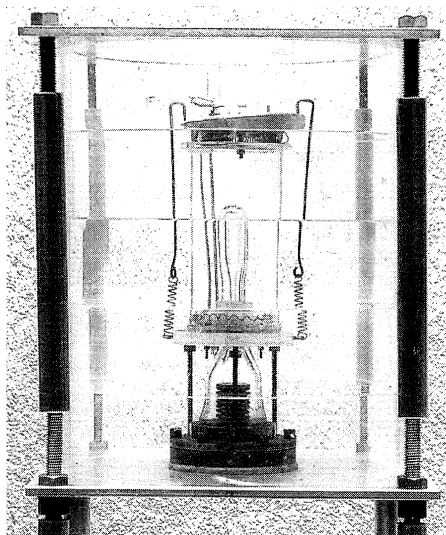
Central in the infrastructure through which France obtains some 80% of its electric power from nuclear energy stands the French Atomic Energy Authority (Commissariat à l'Energie Atomique - CEA). This year the CEA celebrates its Golden Jubilee.

Mastery of nuclear energy goes hand-in-hand with fundamental research in the fields of nuclear and sub-nuclear physics, and the founders of the CEA, like F. Joliot and F. Perrin, considered it essential to relaunch fundamental research in France after the Second World War. In particular, A. Messiah's courses on quantum mechanics made a considerable contribution to the re-establishment of a French school of atomic and sub-atomic physics.

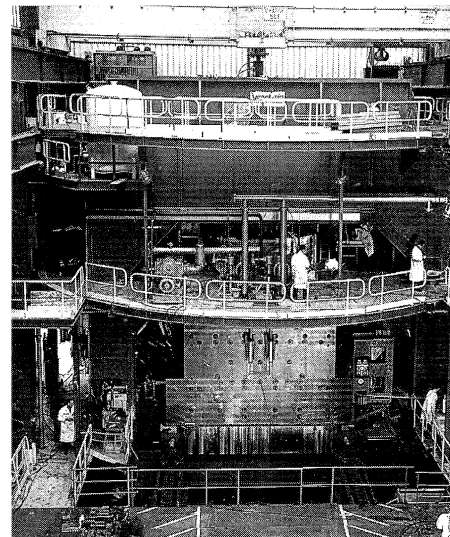
As the CEA expanded and nuclear industry grew up, the need was shown for close links between fundamental research and its applications. In addition, the CEA realized how important it was to become a part of the national and international scientific community as highly effective cooperation was developing. The CEA has drawn a wealth of scientific, cultural and intellectual benefits from its collaboration with CERN.

During the same period, as fundamental particle physics research has been making spectacular progress, its requirements have grown commensurately. It is not therefore surprising that CERN needs partners capable of bringing together the domains of fundamental research and major equipment and of promoting a dialogue between research and

A. Berthelot, founder of particle physics at the French Atomic Energy Authority (Commissariat à l'Energie Atomique - CEA), with Pierre Auger, one of the founding fathers of CERN.



The beginning of bubble chamber construction in Europe: the first heavy liquid bubble chamber (diameter 8 cm) built in Europe by A. Rogozinski (Saclay 1955).



Mirabelle, the large (11 cubic metre) hydrogen bubble chamber built at Saclay under F. Frugne and put into service at the Soviet Serpukhov Laboratory.

CEA 1945 - 95



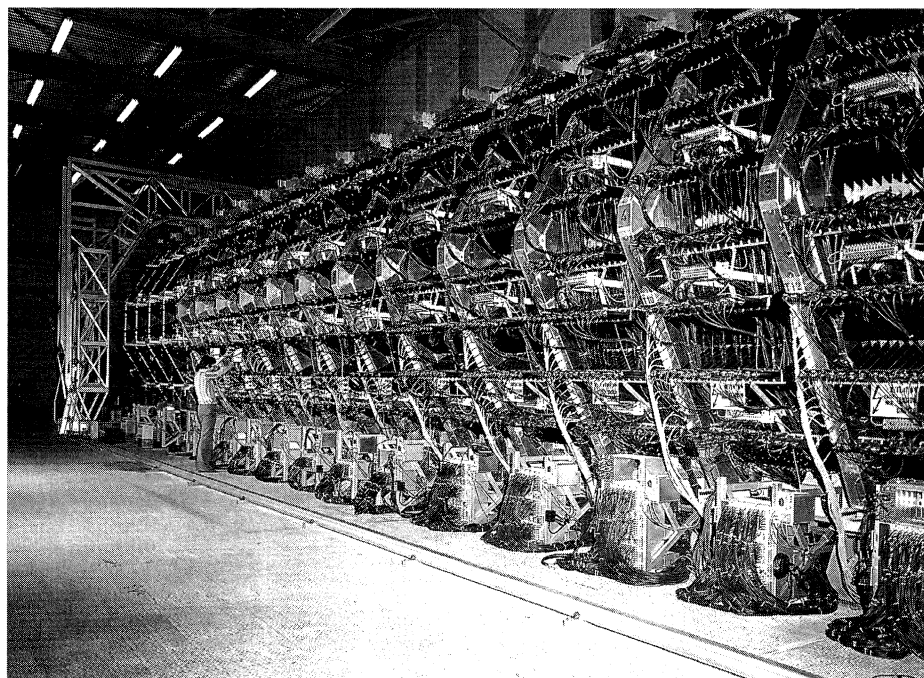
The first book on quantum mechanics published in French - the bible for several generations of French physicists.

Albert MESSIAH, Ph. D.
Ingénieur en Chef des Mines
Professeur à l'Institut national
des Sciences et Techniques nucléaires

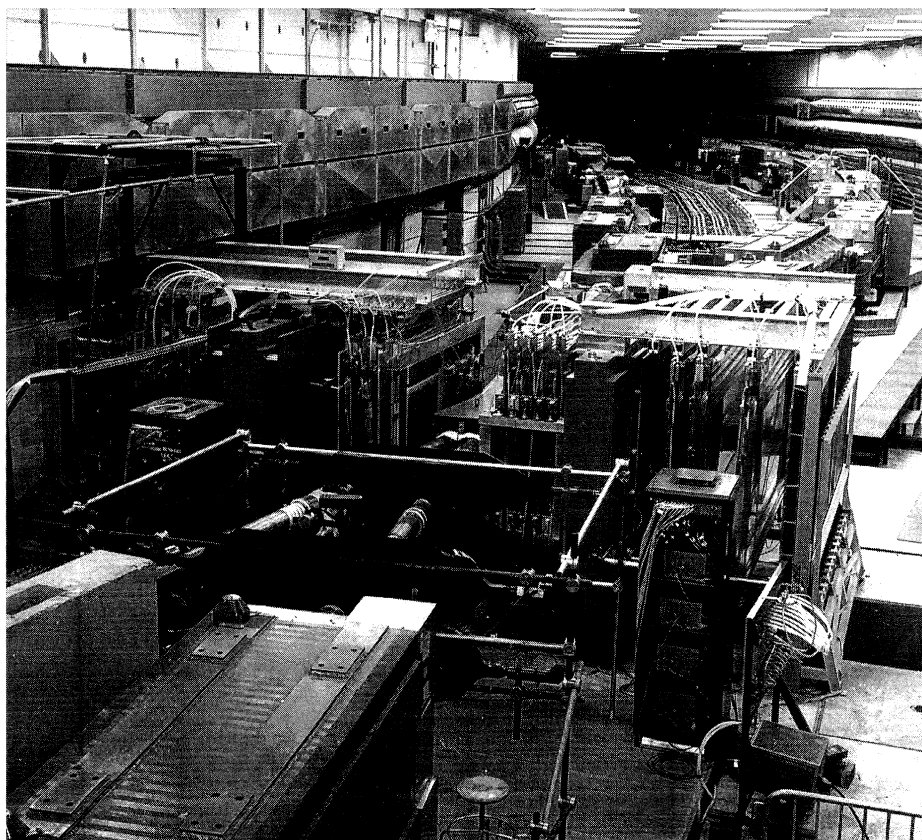
MÉCANIQUE QUANTIQUE

TOME I

DUNOD
PARIS
1959



The impressive neutrino detector of the CERN/ Dortmund/Heidelberg/Saclay (CDHS) collaboration. The French group was led by René Turley, who went on to direct particle physics at Saclay from 1983-92.

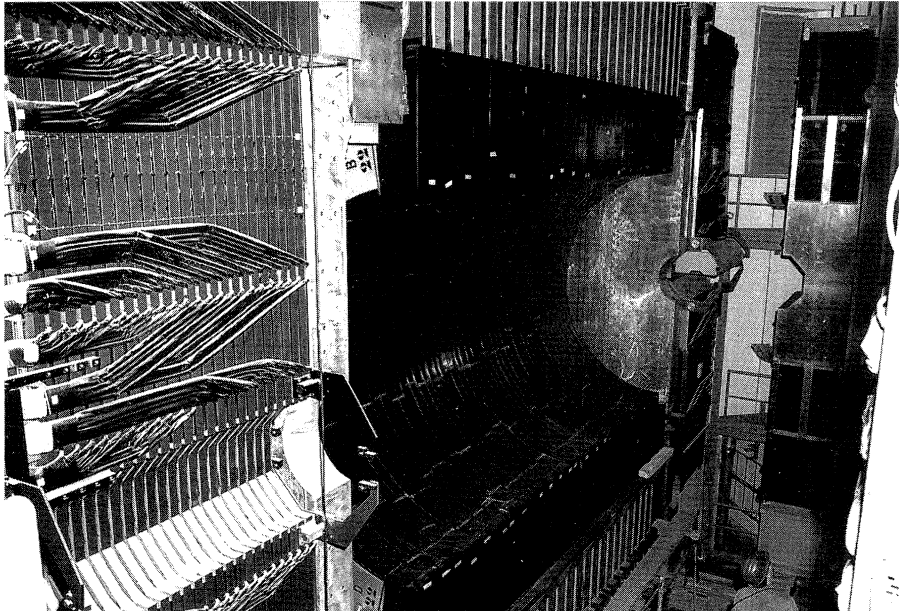
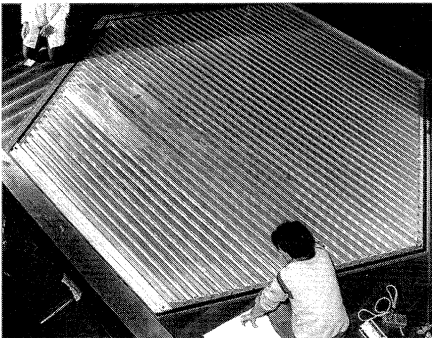


industry. As was pointed out by Jacques Haissinski, head of the Department of Astrophysics, Particle Physics, Nuclear Physics and Associated Instruments (DAPNIA), the CEA, set up to develop major programmes for applying nuclear processes, is particularly well equipped to design, build and operate the huge instruments for exploring the infinitely small and the infinitely large.

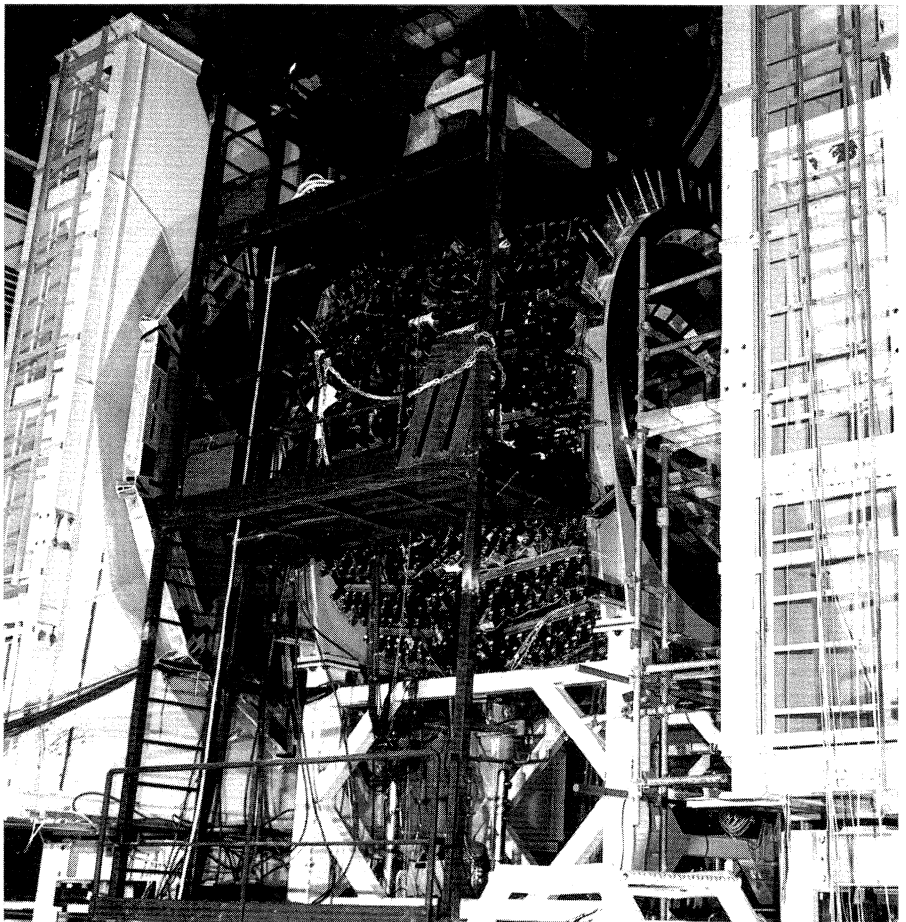
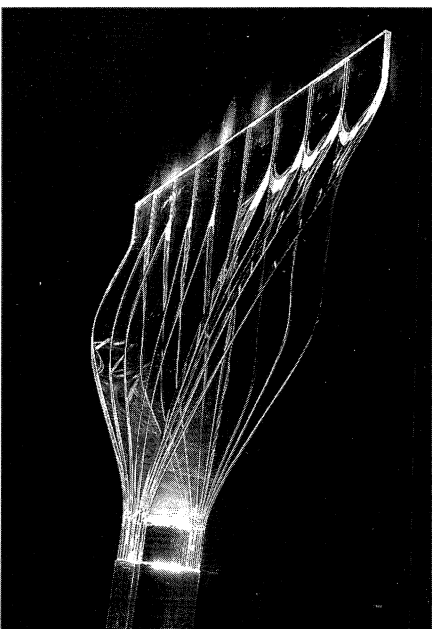
Tomorrow's nuclear industry needs and will continue to need fundamental research, with its openness and its cooperation. Particle physics needs and will continue to need motivated and steadfast supporters. CERN and the CEA can count on each other.

Experiment R607 at the CERN Intersecting Storage Rings included the Saclay group led by Marcel Banner. This revealed particles with large transverse momentum, the result of violent collisions between the quarks and gluons deep inside the colliding protons.

One of the large drift chambers supplied by Saclay for the CDHS neutrino experiment at CERN.



Below, one of the light guides for UA1's electromagnetic calorimeter, supplied by Saclay.



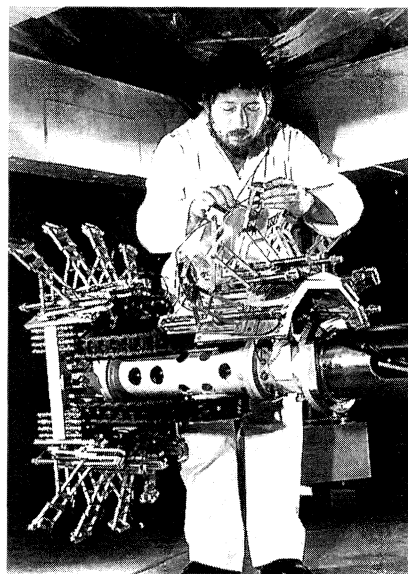
The famous UA1 (top, right) and UA2 (below, right) experiments at CERN's proton-antiproton collider. The Saclay groups were led respectively by Michel Spiro and Marcel Banner, under Pierre Lehmann, Director of Saclay's Elementary Particle Physics Department (DPhPE) from 1975-83.

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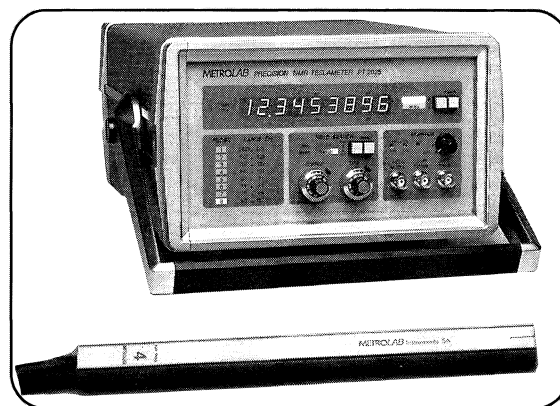
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