

CERN Courier Archive: 1973

A LOOK BACK TO CERN COURIER VOL. 13, OCTOBER 1973, COMPILED BY PEGGIE RIMMER

MEETING

Physics at Bonn and Aix

Two important conferences came close together at the end of the summer: the 6th International Symposium on Electron and Photon Interactions at High Energies in Bonn, 27 to 31 August, and the 2nd Aix-en-Provence International Conference on Elementary Particles, 6 to 12 September.

At both conferences the highlight and main talking point was the evidence of neutral currents. The discovery came in a CERN experiment with a neutrino beam into the heavy liquid bubble chamber Gargamelle, and was confirmed at the National Accelerator Laboratory USA with a neutrino beam into a huge counter-spark chamber array.

During the week of the Aix conference much more attention than usual was given to the need for communication with non-physicists. In the plenary session on

"Popularizing High Energy Physics", V F Weisskopf made the telling comment that not a single science writer had been invited to the conference. He was adamant that the physicist had a duty to explain what he [sic] was doing to the people who paid him.

A most agreeable series of soirees, "La Physique dans la Rue", attracted several hundred people per evening to a courtyard where they could talk to physicists in an informal atmosphere. Subjects ranged from astrology to homoeopathy, nuclear reactors, scientific conscience and occasionally high-energy physics.

For a few brief days Aix-en-Provence had the feeling that it knew what a physicist looked like. Perhaps just as important, quite a few physicists had the opportunity of finding out what the public looked like.



A typical courtyard scene at Aix where small groups gathered to discuss anything from Madame Soleil to high-energy physics.

● Compiled from texts on pp 291–298.

OTHER LABS

Environmental research at Berkeley

In recent years several high-energy physics laboratories in the USA have become more involved in research on environmental problems. The new involvement at the Lawrence Berkeley Laboratory emerged in 1970 from the personal initiative of a few of the staff deeply concerned at the seriousness of many of the problems.

A series of weekly seminars began in which a wide range of environmental science experts built up the laboratory's awareness of what is being done, what remains to be done and where the problems lie.

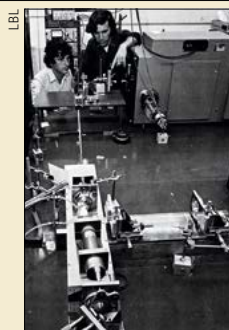
In April, the staff at large were sounded out to gauge interest and search for ideas on contributions that the laboratory might make. About 50 specific ideas emerged and the most interesting were assembled into a booklet *A Programme for Environmental Research*. At the end of 1970 J M Hollander and A M Sessler [LBL director 1973–1980] were appointed "co-ordinators of environmental research" and early the following year the first project was launched, funded by the National Science Foundation. It was a survey of instrumentation in environmental monitoring.

After building up a base research programme relevant to environmental problems, the philosophy moved towards looking at the nation's urgent problems in the

field of energy and environment. Proposals were drawn up on such topics as geothermal energy, solar energy and the biomedical effects of non-nuclear energy sources.

These were presented to the Atomic Energy Commission but non-nuclear work was pruned from the AEC programme for the present fiscal year and none of the proposals have got off the ground.

Nevertheless, the LBL environmental science programme involves an expenditure of about a million dollars per year with 40 scientists committed to it. Coming from the personal concern of a few people three years ago, this is no small achievement.



The alignment of instrument components using resonance Raman scattering. The incident beam comes from a tunable dye laser in the foreground; a high-resolution spectrometer is visible top right.

● Compiled from texts on pp303–306.

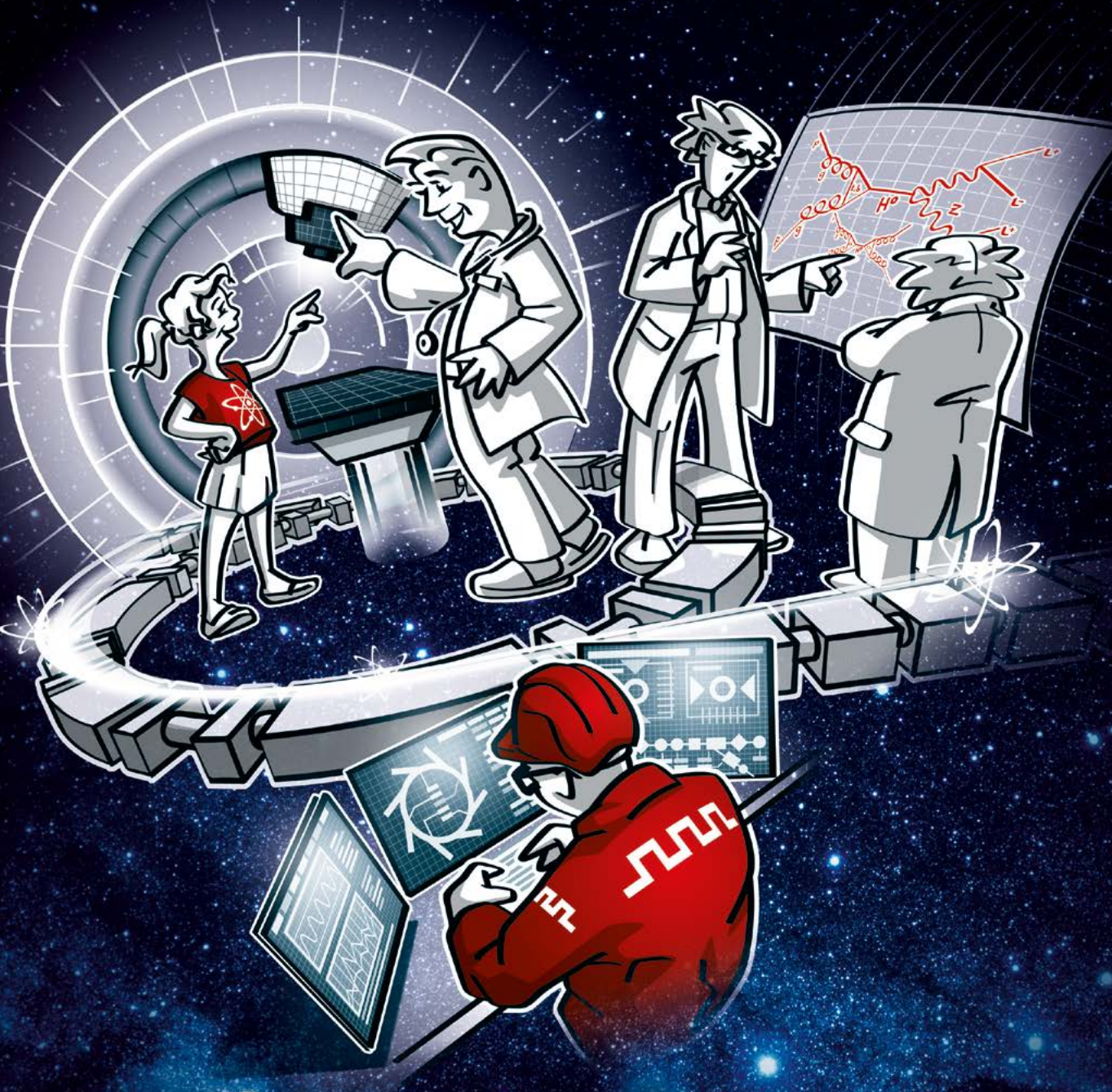
Compiler's Note



While the discovery of neutral currents is recalled, its importance is so well known by now that it is not covered at length in this note.

However, the progress made in popularising physics has been truly astounding. Already in December 2012 at the Fête de l'Escalade, Geneva's annual celebration of the defeat of a surprise attack by the Duke of Savoy in 1602, a souvenir tin tray doubling as an Echelles & Dragons/Snakes & Ladders board featured a Higgs boson in square 87, taken by the promoters to be as recognisable as other cartooned notables such as Professeur Tournesol, square 16, and Marilyn Monroe, square 24.

Although most members of the public are aware of the spin-off from particle physics to nuclear medicine, the transfer of technology to environmental science is less widely acclaimed. Under Andrew Sessler's direction, LBL became a truly multidisciplinary research centre and a stop on celebrity tours. It seems likely that it was primarily the work on environmental problems that appealed to eco-champions Prince Charles and the Dalai Lama during their visits to the laboratory in the 1970s.



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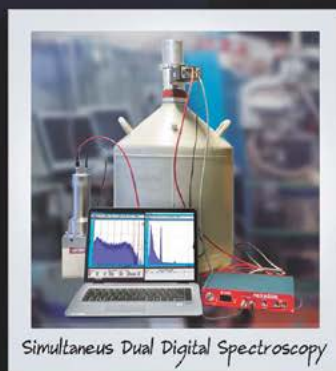
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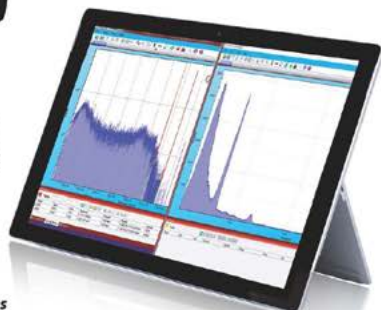


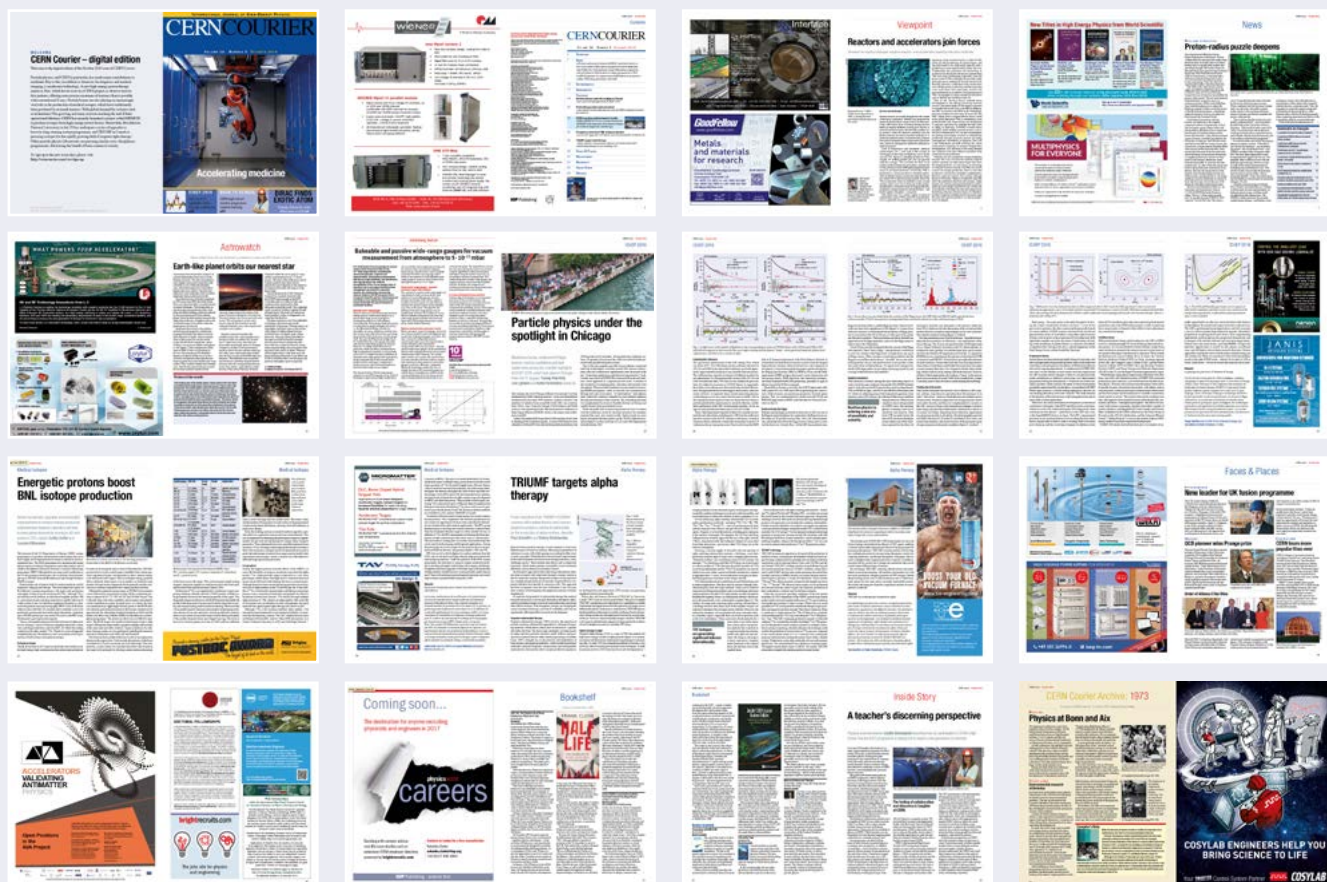
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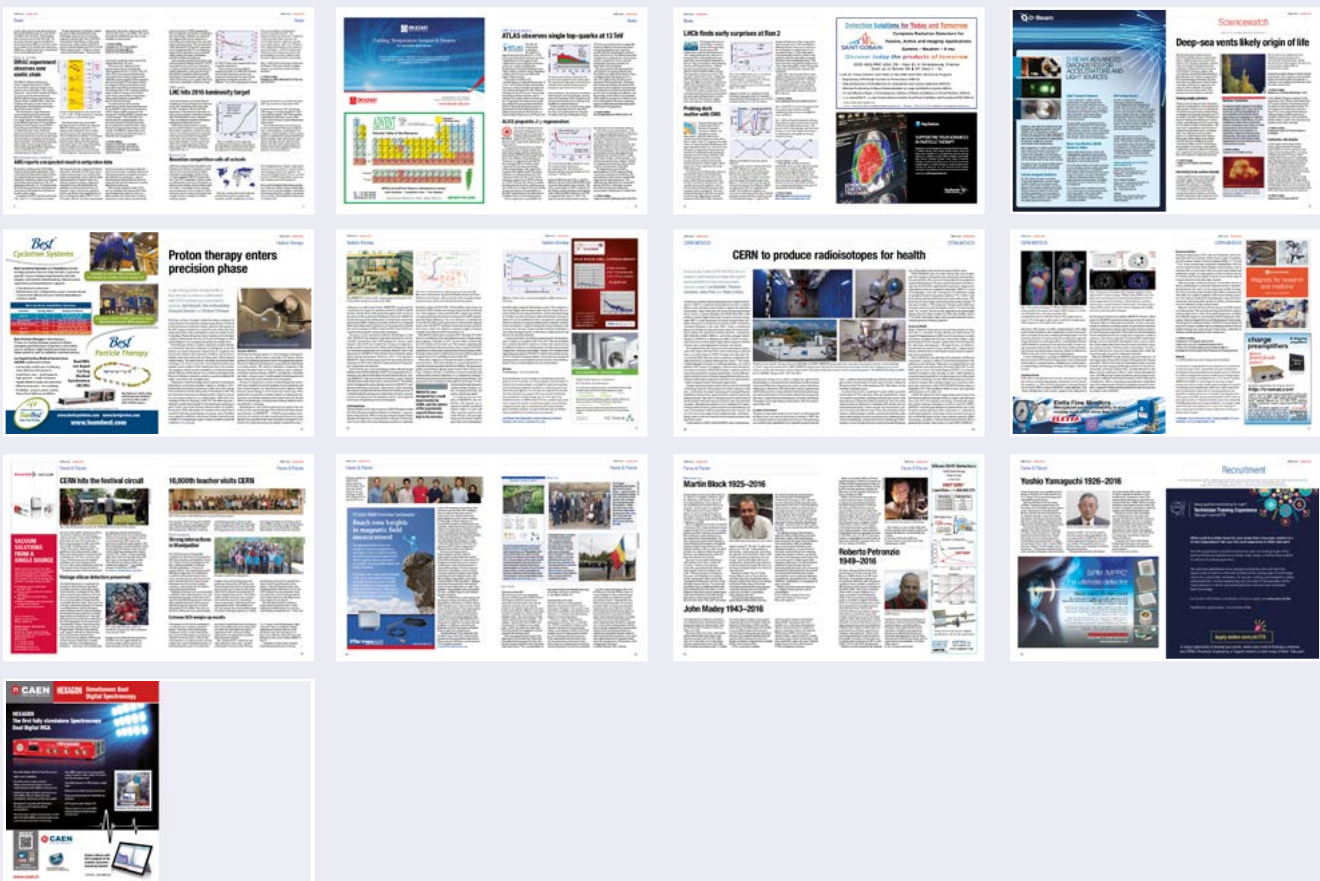
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WELCOME

CERN Courier – digital edition

Welcome to the digital edition of the October 2016 issue of *CERN Courier*.

Particle physics, and CERN in particular, has made major contributions to medicine. Key to this, in addition to detectors for diagnosis and medical imaging, is accelerator technology. A new high-energy proton therapy centre in Nice, which has its roots in a CERN project, is about to treat its first patients, offering more precise treatment of tumours than is possible with conventional X-rays. Particle beams are also playing an increasingly vital role in the production of medical isotopes, which have traditionally been produced by research reactors. With global demand for isotopes such as technetium-99m growing and many reactors reaching the end of their operational lifetimes, CERN has recently launched a project called MEDICIS to produce isotopes from high-energy proton beams. Meanwhile, Brookhaven National Laboratory in the US has undergone a series of upgrades to boost its long-running isotope programme, and TRIUMF in Canada is pursuing isotopes for the rapidly growing field of targeted alpha therapy. Other particle-physics laboratories are pursuing similar cross-disciplinary programmes, illustrating the benefit of basic science to society.

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