

The European Organization for Nuclear Research (CERN) came into being in 1954 as a co-operative enterprise among European governments in order to regain a first-rank position in nuclear science. At present it is supported by 13 Member States, with contributions according to their national revenues: Austria (1.90%), Belgium (4.07), Denmark (1.95), Federal Republic of Germany (19.15), France (20.81), Greece (0.60), Italy (9.90), Netherlands (3.77), Norway (1.58), Spain (4.21), Sweden (4.15), Switzerland (3.23), United Kingdom (24.68). The budget for 1962 is 78 million Swiss francs.

The character and aims of the Organization are defined in its Convention as follows:

'The Organization shall provide for collaboration among European States in nuclear research of a pure scientific and fundamental character, and in research essentially related thereto. The Organization shall have no concern with work for military requirements and the results of its experimental and theoretical work shall be published or otherwise made generally available.'

Last month at CERN

After the intense activity of the month before, August was a relatively quiet month at CERN, and many people were on holiday. For those that remained, work went on as usual, but with little of special note to report.

Among the experiments reported at the High-energy Conference in July were those on the decay of positive pions into neutral pions, the scattering of muons by carbon, the capture of muons by protons, the anomalous magnetic moment of the muon, and the lifetime of the positive muon. These interesting and important measurements were all made with the CERN **600-MeV synchro-cyclotron**, which then, so it seemed, chose the very week of the Conference to break down. This was not too inconvenient since the 'proton room' was in any case being used for the Conference. After necessary repairs to the vacuum system had been carried out, the programme of experiments planned for this summer was continued, with further measurements on the muon lifetime and a study of the formation of hydrogen molecules incorporating a muon.

From 21 August to 3 September, the accelerator was shut down, mainly to effect a transfer of the radiofrequency system to a new equipment room. A general improvement of the r.f. system was also undertaken, including an increase in the range of the frequency sweep, which permits the use of a higher magnetic field at the centre of the machine. The resulting increase in field gradient and hence in vertical focusing of the beam is expected to result in better yields of secondary particles from internal targets.

During the last week of August, the **proton synchrotron** was also shut down, beginning a two-month period during which major alterations are being carried out, directed mainly towards the

opening up of the East experimental area, the extraction of the primary proton beam, and new investigations into the nature of neutrinos.

Before the shut-down the machine ran well, and although several pieces of equipment suffered breakdowns the amount of time lost was comparatively small. In the last two weeks, over 300 000 pulses of accelerated protons were delivered, covering some 168 hours altogether, at energies ranging from 11 to 24 GeV. The intensity was remarkably high, averaging over 5×10^{11} protons per pulse during this period.

Among the experimental teams working with the accelerator up to the shut-down was the group from **Argonne National Laboratory**, led by **Dr. A. Roberts**, which has now completed its experiments at CERN. The members of the group, with their successful spark chamber and other equipment, are now returning to the U.S.A.

On 7 August a visit was paid to the Laboratory by Mr. **Joseph Godber**, Minister of State for Foreign Affairs of the United Kingdom, who took advantage of his presence in Geneva for the 18-nation Disarmament Conference of the United Nations to take a look at our Organization, where the barriers of nationality are much less noticeable. He was accompanied by Lady Wright and Mr. N. Wright, wife and son of the Deputy U. K. Delegate to the Disarmament Conference, by General E. L. M. Burns, Deputy Leader of the Canadian Delegation, and by Mr. M. Cavaletti, Italian Ambassador and Delegate to the Conference ●

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The cover photograph illustrates the main theme of this issue, the International conference on instrumentation for high-energy physics, held at CERN in July, and shows the concentration of the participants as they listen to Prof. Jentschke's closing talk in the main auditorium. The television camera and monitor screen for the 'overflow' rooms can be seen on the right-hand side of the picture.

Photo credits : all photos by CERN/PIO.

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