

ECFA new Chairman

The European Committee for Future Accelerators has elected a new Chairman and Secretary who took office for the first time at a Plenary Meeting held on 9 May. The Chairman is T. G. Pickavance, Director of Nuclear Physics at the Science Research Council (UK) and formally Director of the Rutherford Laboratory. The Secretary is D. Harting (Netherlands).

Dr. Pickavance opened the Plenary Meeting recording the great appreciation of the European particle physics community to E. Amaldi (the former Chairman) and A. Citron (the former Secretary) for the devotion with which they had led ECFA for many years. Professor Amaldi was elected President of the CERN Council last December.

Protons towards ISR

On 22 April a beam was ejected from the CERN proton synchrotron towards the intersecting storage rings for the first time. It was taken about 35 m along the beam-transfer line through several quadrupoles and bending magnets into a copper 'beam-dump'. Several periods of machine time since then have been used to check the behaviour of the ejection and the first section of the beam-line. The performance meets the design expectations.

The fast ejection from the PS involves a fast kicker magnet, positioned in straight section 97, which bends the beam into

two septum magnets, in straight section 16, which complete the ejection from the ring. Two 'bump magnets' (an innovation at the PS) also play a part in the ejection. They serve to distort the beam orbit in the ring so that the beam passes very close to the first septum. When the kicker magnet comes on, it then has less work to do in bending the beam into the aperture of the septum magnet. The ejection system has worked well providing beams through the first part of the beam-line with remarkable stability. Ejection efficiencies have been over 90 %.

The first tests have been carried out using four, or all, of the twenty bunches of protons in the synchrotron. However, it has proved possible to carry out the tests taking only two out of the twenty bunches leaving the rest of the beam for experiments. Also, to fit in with the requirements of the experimental programme of the PS, the tests have been carried out with at 15 GeV (they will later be taken to higher energies).

A variety of methods were used to observe the ejected beam including pick-up electrodes, grid type secondary emission monitors and closed circuit television observation of screens (consisting of grids of fluorescent glass fibres) placed in the path of the beam.

At the moment all the control and monitoring is carried out from the 'Y building' (where the beam-lines to the ISR fork to take protons to one storage ring or the other). This will soon be transferred to the SRC (Storage Ring

A diagram of the split field magnet with its compensating magnets to be installed in intersection region I 4 of the ISR. The main magnet, designed to provide the longest possible trajectory for the high-energy secondary particles subject to the field, is symmetrical in relation to the plane AA'. At the level of the median plane, the magnetic field lines are directed towards the top on one side of the plane of symmetry and to the bottom on the other. The trajectories of circulating protons will remain undisturbed outside the intersection region. The main spacers are shown in black; the lower two could be replaced by four smaller ones (cross-hatched) to facilitate certain experiments.

Control Room) and the control computer will be brought into action in the setting up of magnets and the processing of information from the beam monitors. When this stage is complete there should be little problem in extending it to the whole of the beam-lines to the ISR.

Another major event in the ISR project occurred on 13 May. The last of the bending magnets for the two rings was moved into place completing a steady programme of installation which began at the end of 1968. Altogether 264 bending magnets (72 short units and 60 long units for each ring) have been assembled, tested and installed.

Split field magnet

The problems of carrying out experiments with the ISR are very different from those at conventional accelerators. For example, the magnetic fields required for the analysis of the momentum of the collision products must cover the intersection regions for many experiments and thus can also affect the protons which continue to travel around the rings. These protons must emerge from the interaction region unaffected by any magnet system used in the region.

A 'split field' magnet has been adopted for interaction region I 4 (see CERN COURIER vol. 9, page 102) and the Magnet Group of the ISR Department is responsible for its construction. The original proposal (put forward by J. Steinberger)

