

People and things

This model twin-aperture superconducting magnet from the research and development programme for CERN's LHC proton-proton collider recently achieved a magnetic field of 10.25 tesla at 2K.

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LHC magnets

In the research and development programme for CERN's LHC high energy proton-proton collider to be built in the 27-kilometre LEP tunnel, a model twin-aperture superconducting magnet recently achieved a magnetic field of 10.25 tesla after being cooled to 2K.

The magnet used new wide-cable niobium-titanium conductor, with up to 27,000 5-micron filaments.

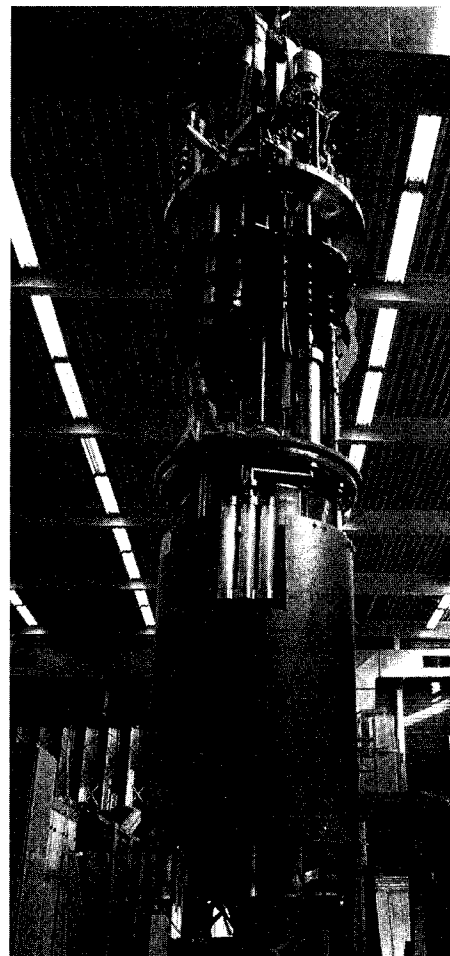
Meanwhile on 23 April an agreement was signed between CERN, Helsinki University of Technology and Uppsala University for the development of prototype LHC superconducting magnets. CERN LHC superconducting magnet development work already involves collaborations with partners in Austria, France, Germany, Holland, Italy, Spain and the UK.

Physics cinema

Physics cineast Lynn Silverman's 53-minute film 'Anatomy of an Experiment' about the Aleph collaboration at CERN's LEP electron-positron collider had peak time showing on the Franco-German 'Arte' channel in May.

Oxford accelerators

Oxford Instruments are combining skills from their Synchrotron and Cyclotron groups into an Accelerator Technology Group under Martin Wilson. Principal activities are manufacture of compact superconducting synchrotrons and cyclotrons, together with development and design work for new accelerator applications and research equipment.



Gerhard 'Gerry' Fischer 1929-93

Gerhard 'Gerry' Fischer of the Stanford Linear Accelerator Center (SLAC) died on 7 February. After research at Columbia and Harvard, he became convinced of the importance of electron-positron colliders. He moved to SLAC for the design and construction of the SPEAR ring. As well as being responsible for SPEAR's injection system, he also designed the solenoid magnet for the famous Mark I experiment. Subsequently he went on to assume a major role in the development of Stanford's SLC Linear Collider.

University of Lancaster
School of Physics and Materials

TWO RESEARCH ASSOCIATE POSITIONS

Applications are invited for two postdoctoral Research Associate Positions in the Particle Physics Group. The successful candidates will work in one of the following activities of the group.

1. Studies of electroweak interactions in ALEPH at LEP at CERN.
2. Deep Inelastic Scattering in the H1 group at HERA at DESY.
3. Detector development for the inner tracking detector for the ATLAS collaboration at the LHC at CERN.

Both posts are supported by the SERC in the UK. Applications consisting of a CV together with the names of two referees should be sent to:

Professor T Sloan
School of Physics and Materials
University of Lancaster
Lancaster LA1 4YB
UK

(e-mail: TS@UK.AC.LANCS.PH.V1).

from whom further details can be obtained. The closing date for applications is 30 June 1993.

HEAD OF FACILITIES DEPARTMENT NATIONAL SUPERCONDUCTING CYCLOTRON LABORATORY MICHIGAN STATE UNIVERSITY

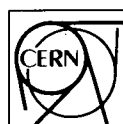
The National Superconducting Cyclotron Laboratory at Michigan State University is seeking to fill the position of Head of the Facilities Department. The NSCL has a staff of approximately 130 people and it is funded by the National Science Foundation for research in basic nuclear physics, accelerator physics, and related instrumentation R&D. The Head of the Facilities Department will be responsible for directing approximately 10 technical professional staff in the disciplines of ion source operation and related R&D superconducting magnet design and fabrication, and cryogenic and mechanical engineering. The department is responsible for the continued reliable operation of the experimental facilities including the ion sources, K1200 superconducting cyclotron, and associated beam transport systems. The department is also expected to initiate and/or participate in R&D projects aimed at improving present operations.

The candidate must have a demonstrated ability to manage in a technical research environment. Previous experience in accelerator laboratories is highly desirable. A bachelor's degree or equivalent in mechanical engineering, electrical engineering, or physics with at least five years professional experience is required.

Positions in the NSCL Continuing Appointment system parallel tenure system ranks at MSU. Applicants should send resume to Ms. Chris Townsend, Laboratory Administrator, Cyclotron Laboratory, Michigan State University, East Lansing, MI 48824-1321 by July 12, 1993. Michigan State University is an affirmative action/equal opportunity institution. Women and minorities are especially encouraged to apply.

University of South Carolina Faculty Position in High Energy Physics

The Department of Physics at the University of South Carolina invites applications for a tenure-track position in the area of experimental high energy physics to begin on January 1, 1994. The position is at the assistant professor level although appointment at a higher level may be considered for an exceptionally qualified candidate. The South Carolina high energy group currently pursues e^+e^- collider physics at KEK's TRISTAN ring using the AMY detector and two experiments at Fermilab, E789 on two-body B^0 decays and E687 on charm photoproduction. The ongoing programs would welcome new members, but candidates with other research interests will also be considered. Applicants should submit a curriculum vitae and publications list, a statement of research interests, and the names of professional references to **Prof. Frank T. Avignone, III, Chairman, Department of Physics and Astronomy, University of South Carolina, Columbia, SC 29208**. The University of South Carolina is an Affirmative Action / Equal Opportunity employer and solicits applications especially from qualified women and minorities.



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1992 Physics Nobel Georges Charpak (right) tours the successful 'La France au CERN' trade expo held at CERN from 30 March to 2 April.



Alexander S. Davydov (1912-1993)

A.S. Davydov died in February of a disease induced by a heart attack. In the early 1940s simultaneously and independently of Rarita and Schwinger he proposed a relativistic equation for spin 3/2 particles. Later he shifted towards solid state theory, nuclear physics, nonlinear phenomena and biophysics. Such notions as "Davydov splitting", "Davydov-Filippov model of nonaxial nuclei", "Davydov solitons" became widespread. A popular author of brilliant books and manuals, his "Quantum Mechanics" is used worldwide as a basic text. He worked in Moscow, Kiev, Obninsk and Ufa. From 1973-88 he headed the Institute for Theoretical Physics of the Ukrainian Academy of Science in Kiev, and remained as Honorary Director of the Institute.

From L. Jenkovszky and V. Loktev
(Institute for Theoretical Physics,
Kiev)

On 29 March CERN Research Director Walter Hoogland formally opened CERN's travelling exhibition in Prague, organized in collaboration with the Czech Academy of Sciences, with Czech Deputy Ministers P. Bratinka (left, Foreign Affairs) and V. Ludvik (right, Industry and Trade).

A Guide to Radiation and Radioactivity Levels Near High Energy Particle Accelerators, by Anthony H. Sullivan, Nuclear Technology Publishing, Ashford TN231JW UK (ISBN 1-870965-18-3)

The design of shielding and the prediction of the induced radioactivity for high energy accelerators have usually been considered by most accelerator builders as a somewhat mysterious subject for which they were largely dependent on the wisdom of a few specialists.

This has changed dramatically for people with a do-it-yourself mentality after the publication of this delightful book by Tony Sullivan of CERN, which will stand as his 'scientific testament', condensing the knowledge from a lifetime's work as a radiation protection physicist.

For each subject Sullivan gives a short description of the physics involved, after which he uses his extensive experience around CERN accelerators to condense a diversity

of physics processes into a wealth of handy formulae and tables as well as almost 100 graphs.

This data enables those with minimal knowledge in this field to find their own answers to many of the radiation protection questions which arise in accelerator design, such as the dose rate as a function of shielding thickness, the shape and dimensions of access chicanes, skyshine from weak spots in roof shielding, the level and decay rate of induced radioactivity during a machine shut-down, etc.

There was clearly a strong need for such a handbook, and I am convinced Sullivan's book will save a lot of time for people involved in radiation protection around accelerators.

Bastiaan de Raad

European Physical Society

After two years in office, Maurice Jacob of CERN steps down as President of the European Physical Society. His successor is Budapest



Physics Faculty Position Theoretical Accelerator Physics University of Houston

The Department of Physics invites applications for a tenured, or tenure-track position which it expects to be open for Fall 1993, at a rank appropriate to the qualifications of the candidate. Applicants for the position are expected to have extensive experience in theoretical research on high energy accelerators and storage rings. Involvement in operation of accelerators, and beam studies, are considered important. The candidate is expected to have demonstrated outstanding excellence in research, and to have interest and ability in teaching. Topics of research interest at UH include: beam dynamics in linacs, space charge effects in low energy proton synchrotrons, optimization of synchrotron tunes in the presence of nonlinear multipole fields, self-consistent treatment of beam-beam interaction in hadron colliders, emittance dilution due to periodic crossings of nonlinear resonances, and the optimum arrangement of magnets in superconducting rings. The group maintains active collaborations with Argonne, Brookhaven, Fermilab and SSCL. Students participate in theoretical investigations as well as various beam studies during residence at laboratories. Applicants should send a full resume and the names of at least references as early as possible, to Prof. Roy Weinstein, Chairman of Search Comm., IBPD, Room 632 SR1, University of Houston, Houston, Texas 77204-5506. The University of Houston is an equal opportunity/Affirmative Action Employer.

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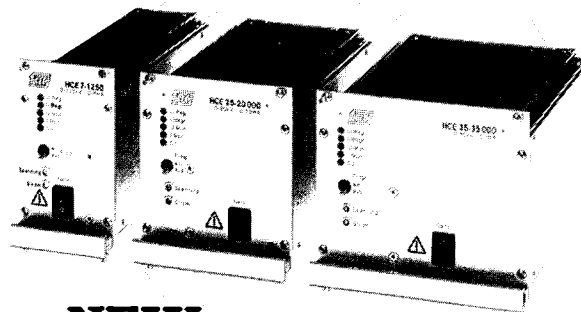
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condensed matter physicist Norbert Kroo. Former CERN Director General Herwig Schopper was reelected to the Executive Committee.

The Society's recent Council meeting in Nice also underlined the importance of EPS involvement in physics education.

Meetings

This year's DESY Theory Workshop on "Quantum Chromodynamics" will be held in Hamburg (Germany) from Sept. 29 - Oct. 1, 1993. Further information from O. Nachtmann (Chairman), Inst. Theor. Physik, Universitaet Heidelberg, D-6900 Heidelberg (Germany); e-Mail: C12 at vm.urz.uni-heidelberg.de

Neutrino 94 - the XVI International Conference on Neutrino Physics and Astrophysics - will be held from 29 May - 3 June 1994 in Eilat, Israel. Contact Arnon Dar, Dept. of Physics, Technion, Haifa 32000 Israel. Fax +972.4.221514, e-mail phr19ad@technion

The second biennial workshop on nucleon-antinucleon physics will be held at the Institute of Theoretical and Experimental Physics (ITEP), Moscow, from 13-18 September. Further information from Naja Smorodinskaya, ITEP, B. Cheremushkinskaya ul. 25, 117259 Moscow, Russia, fax +7(095) 123 6584, e-mail nan93@vxitep.itep.msk.su. Or Silvia Giromini (fax +39 6 9403 243) or Donatella Pierluigi (fax +39 6 9403



European Physical Society and physics education. At the recent EPS Council meeting in Nice, Uppsala particle physicist G. Tibell (left), responsible with G. Marx of Budapest for the new EPS Forum on Education, talks with C.M. Ferreira of Lisbon, who oversees education matters on the EPS Executive Committee.

559), INFN-Laboratori Nazionali di Frascati, cp 13, 00044 Frascati, Italy, decnet vaxInf::nan93 bitnet nan93@irmlnf

Internal targets at HERA

At DESY an international workshop on 'Physics at HERA with internal targets' from September 21-23 will discuss the physics accessible with both the 30 GeV electron and the 820 GeV proton beam of HERA. Special emphasis will be given to: the physics accessible through scattering experiments with polarized/unpolarized electrons and polarized/unpolarized targets; Beauty Physics and CP violation using the HERA proton beams; and the implications for proposed and planned experiments and the accelerators. Participation is open to anybody interested. For further details from e-Mail WIT93@VXDESY.DESY.DE or fax: ++49 40 8994 4304.

Polarized beams at Stanford

A marked increase in beam polarization and a recent doubling of the luminosity at Stanford's SLC linear collider have considerably increased physics potential. Story in the next issue.

L. Jackson Laslett

Prominent Berkeley machine physicist L. Jackson Laslett died on 7 May. A full tribute will appear in the next issue.

C. de Witt (left), founder of the Les Houches Summer School over 40 years ago, and A. Nemoz, President of the University of Grenoble, at les Houches in April to discuss future les Houches programmes. During the meeting, the main auditorium was dedicated to the late Y. Rocard who served on the Les Houches Board for many years. C. de Witt was recently awarded the 'Prix du Rayonnement français'. (Photo M. Jacob)

Elementary Particle Physics

The Particle Physics Department of the Rutherford Appleton Laboratory has a vacancy for an Elementary Particle Physicist to work on its experimental programme. The Department is engaged in research at CERN and DESY and other Institutes abroad. The programme also includes non-accelerator experiments.

The successful applicant will be expected to participate in one of the current projects and to plan future experiments for the next generation of accelerators. He or she will be required to work closely with other members of the Department and to collaborate with physicists from Universities and other Institutes in the UK and abroad. Communication skills and the ability to contribute effectively as a member of a team are therefore essential. He/she should be prepared to spend a significant fraction of his /her time working overseas, if required.

The appointment will be made in the Higher Scientific Officer or Senior Scientific Officer grade, according to ability and experience. The salary ranges are:

Higher Scientific Officer £12,833 to £22,669 pa

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Formal minimum entry qualifications required for the Higher Scientific Officer grade are a degree, HNC/HND or equivalent in a relevant subject together with at least 2 years Post Graduate experience with a first or second class honours degree or 5 years relevant experience with an ordinary degree, HNC/HND or equivalent. For the Senior Scientific Officer grade a first or second class honours degree plus at least four years post graduate experience is required. It is expected that the successful candidate should have several years of post-doctoral experience in the field of Elementary Particle Physics. We offer excellent working conditions and benefits include a non-contributory pension scheme and generous holidays.

For an application form please contact the Recruitment Office, Personnel and Training Division, Science and Engineering Research Council, Rutherford Appleton Laboratory, Chilton, Didcot, Oxon, OX11 0QX. Tel: 0235-445435 for an application form, quoting reference number VN 1114.

All applications must be returned by 25th June 1993

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Physicist – Silicon Detector Systems

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LBL is seeking a technically oriented physicist to assume responsibility for the development of Silicon Tracker detector modules, which combine detectors, integrated front-end electronics and cabling. Low-mass hybrid and cabling technologies are critical components of this work, which requires close interaction with commercial vendors. Overall electronic and mechanical characteristics of modules will be measured and analyzed in detail to tailor the design to the experimental environment. With a total of 6.5 million channels, the Silicon Tracker requires carefully developed procedures for quality control, reliability testing, installation, maintenance, and operation.

LBL offers a wide range of technical expertise, including semiconductor device design and fabrication utilizing the LBL Microsystems Laboratory. Our IC

design group has extensive experience in conventional and radiation-hard technologies.

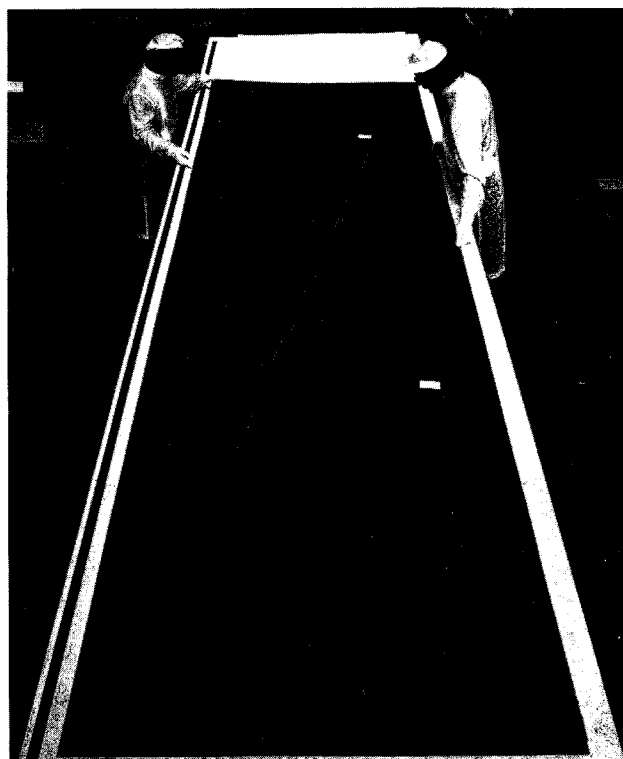
Applicants must have participated in the technical design, installation, and use of complex particle detector systems in high-energy or nuclear physics experiments (not limited to silicon technology). The tasks require a thorough understanding of electronic detectors and measurement techniques, coupled with experience in the conceptual design of small mechanical systems. The ability to carry out research independently and interact with a diverse group of scientists and engineers is essential. Ph.D. in experimental physics preferred.

This is a term appointment, with the possibility of becoming a career appointment. Please send your resume, with references and salary history to: **Lawrence Berkeley Laboratory, Staffing Office, Job #A/1305, One Cyclotron Road, Bldg. 90/1042, Berkeley, CA 94720.** We are an equal opportunity employer.



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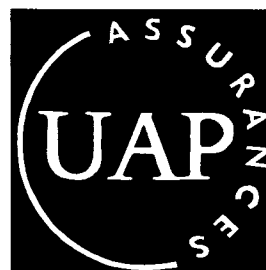
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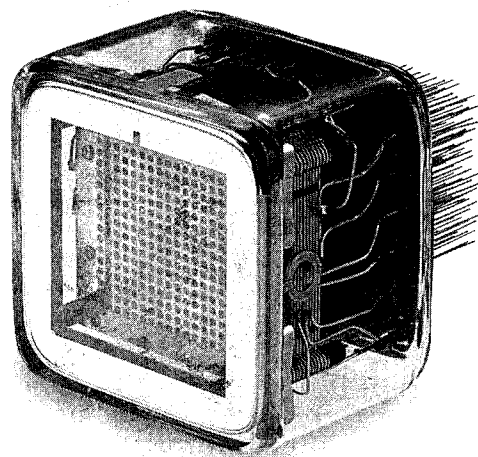
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