

Athens University on the Greek Island of Rhodes. (Application details will become available in Spring but would-be participants should already reserve the dates.)

After Finland, the CAS caravan moved to Benalmadena near Malaga in Spain where, together with Seville University, they organized one of the joint US-CERN schools held every two years and focusing on frontier accelerator topics. This time the subject was electron-positron factories – machines for high luminosity experiments in phi, tau-charm, beauty and Z physics. Experts from both sides of the Atlantic and from Japan shared their knowledge with an equally representative audience and probed the many intensity-related phenomena which must be mastered to reach design performance.

A number of these topics will receive extended coverage in the next specialist CAS School which is a repeat – by public demand – of the highly successful radio-frequency course held in Oxford in 1991. This school will be in Capri, Italy, with the support of the University of Naples from 29 April to 5 May. Details and application forms are now available by e-mail (CASRF@CERNVM.CERN.CH), by fax (+41 22 7824836) or from Suzanne von Wartburg, CERN Accelerator School, 1211 Geneva 23, Switzerland.

At the recent Brookhaven workshop on the Stability of Particle Motion in Storage Rings – left to right, Alex Chao (SSC), Alex Dragt (Maryland), and workshop chairman Alessandro Ruggiero of Brookhaven.

WORKSHOP

Stable particle motion

Particle beam stability is crucial to any accelerator or collider, particularly big ones, such as Brookhaven's RHIC heavy ion collider and the larger SSC and LHC proton collider schemes. A workshop on the Stability of Particle Motion in Storage Rings held at Brookhaven in October dealt with the important issue of determining the short- and long-term stability of single particle motion in hadron storage rings and colliders, and explored new methods for ensuring it.

In the quest for realistic environments, the imperfections of superconducting magnets and the effects of field modulation and noise were taken into account.

The workshop was divided into three study groups: Short-Term Stability in storage rings, including chromatic and geometric effects and

correction strategies; Long-Term Stability, including modulation and random noise effects and slow-varying effects; and Methods for determining the stability of particle motion. The first two were run in parallel, but the third was attended by everyone.

Each group considered analytical, computational and experimental methods, reviewing work done so far, comparing results and approaches and underlining outstanding issues. By resolving conflicts, it was possible to identify problems of common interest.

The workshop reaffirmed the validity of methods proposed several years ago. Major breakthroughs have been in the rapid improvement of computer capacity and speed, in the development of more sophisticated mathematical packages, and in the introduction of more powerful analytic approaches.

In a typical storage ring, a particle may be required to circulate for about a billion revolutions. While ten years



Experimental High Energy Physics

Massachusetts Institute of Technology

The Department of Physics has a long-standing and substantial commitment to experimental high energy physics and invites applications for a junior faculty position. The current faculty are engaged in major programs at both lepton (LEP, SLC, BEPS) and hadron (Tevatron, AGS) accelerators and are preparing for the next generation facilities LHC and SSC. At this time, our preference is for candidates whose research interests overlap those of the L3 experimental program at LEP although candidates of outstanding accomplishment will be considered in other areas. The M.I.T. group has a leadership role in the L3 program and thus is positioned to participate fully in the new science opened up by the LEP upgrade to 200 GeV. The candidate is expected to initiate a research program, supervise graduate students, and participate in the department's undergraduate instructional program. For exceptional candidates, senior faculty appointment may be considered. Candidates are asked to send a *curriculum vitae* and to have three letters of reference sent directly to the chairman of the search committee, Professor Stanley Kowalski, Department of Physics 26-427, Massachusetts Institute of Technology, Cambridge, MA 02139-4307, USA. Applications from women and underrepresented minority candidates are particularly encouraged. MIT is a non-smoking environment.



PHYSIKALISCHES INSTITUT DER UNIVERSITÄT BONN

Am Physikalischen Institut der Universität Bonn
ist ab 1.4.1993 die neugeschaffene

Leitungsstelle für den Elektro- und Elektronik- bereich

zu besetzen. Die Vergütung erfolgt bis BAT Ia. Die Probezeit beträgt 1/2 Jahr.

Das Physikalische Institut treibt mit seinen experimentellen Gruppen Forschung in der hochenergetischen und mittlereenergetischen Teilchenphysik und betreibt dazu eine Elektronen-beschleunigeranlage. Weitere Aktivitäten bestehen in der Forschung mit Synchrotronlicht sowie in der Erforschung der Planetenatmosphären. Der Elektro- und Elektronikbereich (E-Bereich) unterstützt diese wissenschaftlichen Forschungsarbeiten durch Entwicklung, Fertigung und Service elektronischer Komponenten und Geräte. Das Institut möchte die Infrastruktur seines E-Bereichs im Rahmen der verfügbaren Ressourcen verbessern und neue Richtungen in der Entwicklung elektronischer Komponenten und Bauelemente für die Experimente aufnehmen.

Für diese Aufgaben wird ein Leiter (eine Leiterin) des E-Bereichs gesucht mit Hochschulabschluss in einem einschlägigen Ingenieursstudium oder in Physik, der hohe Anforderungen an Organisationstalent und Führungsqualitäten erfüllt. Neben den selbstverständlich vorausgesetzten fundierten Kenntnissen in analoger und digitaler Elektronik für physikalische Experimente, bevorzugt der Teilchenphysik, und das Interesse an neuen Entwicklungen in der VLSI-Elektronik sowie an der Zusammenarbeit mit Diplomanden und Doktoranden erwünscht.

Bei gleicher Eignung werden Schwerbehinderte bevorzugt berücksichtigt.

Auskunft über die Stelle geben gerne Prof. B. Schoch (0228 732344) und Prof. N. Wermes (0228 733533). Bewerbungen werden bis 28.02.93 erbeten an den Geschäftsführenden Direktor des Physikalischen Instituts, Nussallee 12, D-W-5300 Bonn 1, Fax 0228 737 869, oder an die Personalabteilung 3.1 der Universität Bonn, Postfach 2220, D-W-5300 Bonn 1.

Accelerator Physicist Electromagnetic Physicist/Engineer

TEXAS ACCELERATOR CENTER (TAC) invites applications for staff scientist positions in programs of accelerator development and related technologies. TAC is a research center within the Houston Advanced Research Center (HARC). Current research projects include 13 Tesla dual dipole for hadron colliders, 4 Tesla whole-body MRI for medical imaging, compact special-purpose MR imagers, 19 Tesla MR spectroscopy for structural biology, ion source and rf quadrupole for ion beams, compact proton synchrotron for tumor therapy, and superconducting magnetic energy storage.

Interested candidates for the Accelerator Physicist position should have a Ph.D. or equivalent in Physics and experience in theoretical or experimental accelerator physics. Activities may include superconducting magnet development, beam dynamics calculations, and proton accelerator systems.

Electromagnetic Physicist/Engineer candidates should have a Ph.D. or equivalent in Physics or Electrical Engineering, programming experience in Fortran and other high level languages, experience in finite-element codes and integral methods for precise calculation of electromagnetic fields, magnetostatic calculations, rf and eddy current design computations. The successful candidate is expected to perform design calculations and develop new design methods for superconducting magnets and rf devices.

Applicants should send a resume, publication list, and names of three professional references to:

Dr. Peter McIntyre
Director, Texas Accelerator Center
HARC (T-200)
4800 Research Forest Drive
The Woodlands, Texas 77381, USA

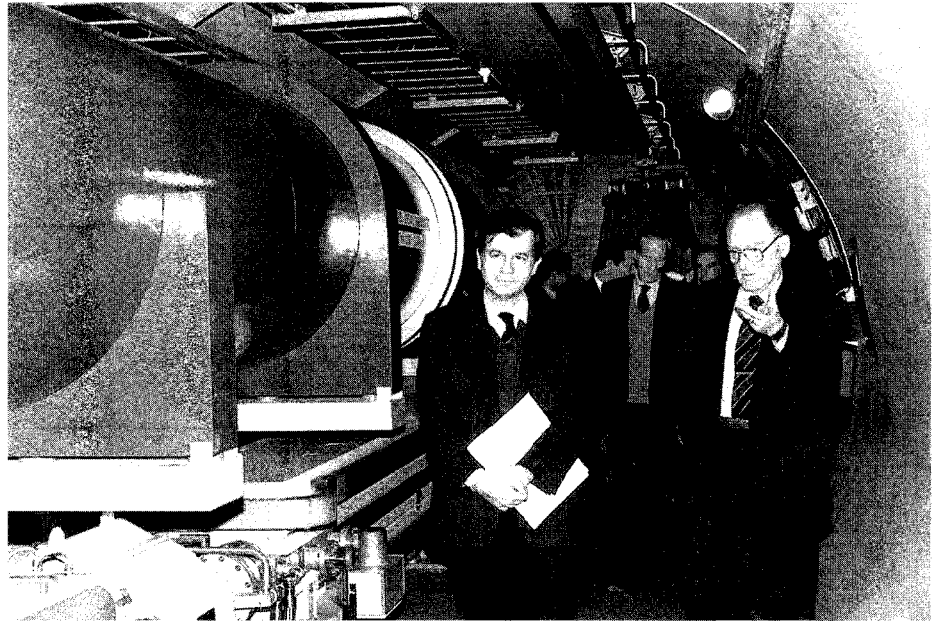
HARC is an Equal Opportunity Employer

People and things

Italian Under Secretary of State Valdo Spini (left), visiting CERN on 2 December, is shown a full-scale model of the LHC/LEP tunnel by Giorgio Brianti.

ago it was only possible to predict accurately stability over about a thousand revolutions, it is now possible to predict over as many as one million turns. If this trend continues, in ten years it could become feasible to predict particle stability over the entire storage period. About ninety participants from the USA and Europe attended the meeting.

From Alessandro G. Ruggiero



On people

Bikash Sinha, Director of the Variable Energy Cyclotron Centre, Calcutta, also becomes Director of Calcutta's Saha Institute of Nuclear Physics.

Alexander Feschenko of the Institute for Nuclear Research of the Russian Academy of Sciences has recently received the Faraday Cup Award for his paper: Bunch Shape Measuring Technique and its Application for an Ion Linac Tuning. The award is given for an outstanding contribution to the development of an innovative beam diagnostics instrument of proven workability.

The Faraday Cup Award was refereed and presented by the committee members of the 1992 Accelerator Instrumentation workshop that was held at Lawrence Berkeley Laboratories on October 27-30. The prize was donated by Julien Bergoz of Bergoz Inc.

UK awards

This year the UK Institute of Physics Guthrie award, for a physicist of international reputation, goes to Ian Butterworth, while the Institute's Maxwell award, for contributions to theory, goes to Thomas Kibble. Both are at London's Imperial College.

Butterworth, CERN Research Director from 1983-6, moved from a pivotal role in UK bubble chamber research to become Head of Department at Imperial before coming to CERN. In 1986 he became Principal of London's Queen Mary College. After a formal retirement he has moved back to research at Imperial.

Kibble is honoured for his numerous contributions to theoretical physics, particularly in gauge theories. Many of these contributions hinge on the subtle but pervasive symmetry breaking effect which has subsequently become known as the Higgs mechanism. He was Head of Department at Imperial from 1983-91.

Director General Carlo Rubbia (right) welcomes Swiss Federal Councilor Flavio Cotti to CERN on 4 December.

