

# FACES AND PLACES

## AGREEMENTS

# Cockcroft Institute collaborates with CERN

In a ceremony on 29 August, CERN signed a comprehensive agreement to establish a long-term framework for scientific collaboration in accelerator research and development with the Cockcroft Institute in the UK. The agreement, which is similar to those made with experiment collaborations, represents the basis for a pioneering model for co-operation in accelerator research new to CERN and the UK.

The agreement is between CERN and the University of Liverpool, acting on behalf of the Cockcroft Institute, which is located on the Daresbury Science and Innovation Campus in north-west England. The institute is a partnership between the Universities of Liverpool, Manchester, Lancaster, the UK Science and Technology Facilities Council (STFC) and the North West Development Agency. Officially inaugurated in 2006 as a national accelerator research and development centre, it provides a focal point for UK scientists and industry to develop leading concepts and technologies for major accelerator projects and derive value for society at large in spin-off applications (*CERN Courier* November 2006 p43).

The collaboration covers R&D related to technologies for accelerators, the training of physicists and engineers in the development and operation of accelerators, and the participation of qualified scientists and personnel in schools and courses. The accelerator research topics cover three main areas. The first concerns the LHC, and in particular LHC beam commissioning, R&D



Left to right: Rolf-Dieter Heuer, John Cockcroft Jr, Swapan Chattopadhyay and Robert Aymar.

on future energy and luminosity upgrades, R&D on the LHC injector complex (the Superconducting Proton Linac and PS2) and the conceptual development of the Large Hadron–Electron Collider. Other areas are R&D for the Antiproton Decelerator complex and R&D on multi-tera-electron-volt electron–positron linear colliders via collaboration in the Compact Linear Collider study and the CLIC test facility, CTF3.

The agreement was signed by CERN's director-general Robert Aymar and acknowledged by Swapan Chattopadhyay, director of the Cockcroft Institute and Sir John Cockcroft chair of physics at the

universities of Liverpool, Manchester and Lancaster. Rolf-Dieter Heuer, CERN's future director-general, and John Womersley from STFC were also present. James Fox, contract manager, signed the agreement later for the University of Liverpool.

The ceremony was also attended by John Cockcroft Jr, grandson of Sir John Cockcroft – the accelerator pioneer and Nobel laureate who together with Ernest Walton first succeeded in “splitting” the atom at Cambridge in 1932 (*CERN Courier* December 2007 p25). Prior to the ceremony, he toured the ATLAS experiment and the CERN Control Centre, together with his wife, Rowan.

## Chomaz becomes head of CEA IRFU

Philippe Chomaz has taken over as head of the Saclay Institute for Research into the Fundamental Laws of the Universe (IRFU), as from 1 August. He succeeds Jean Zinn-Justin.

A nuclear physicist for the French Atomic Energy Commission (CEA) at the Grand Accélérateur National d'Ions Lourds (GANIL) in Caen, Chomaz became deputy director there in 2005 when GANIL started construction of the new SPIRAL2 facility. He has worked

both in experimental and theoretical nuclear physics, but during the past 10 years he has focused on theoretical physics, in particular in nuclear structure, thermodynamics and phase transitions, and nuclear astrophysics. His work has led to progress in general physics, mesoscopic systems, statistical mechanics and quantum mechanics with the definition of phase transitions in small systems, the study of collective vibrations of fermionic systems and the development of stochastic approaches.

In addition to this scientific activity at an international level, Chomaz is deeply involved with outreach and the popularization of science.



Philippe Chomaz now heads the IRFU. (Courtesy Alain Porcher, CEA/IRFU.)

## SYMPOSIUM

# Cluster brings together particle physics and astrophysics

True to its goal of bridging gaps between the astrophysics and the nuclear/particle physics communities, on 23–26 June the Excellence Cluster Universe held a symposium on “Symmetries and Phases in the Universe” in Kloster Irsee, Bavaria. More than 100 astronomers and physicists came to the meeting to learn about current research in these related disciplines. The 15 talks by renowned researchers were followed by lively discussions, which were highly appreciated by the participants.

Joe Silk from the University of Oxford opened the symposium with a comprehensive overview of the evolution of structure in the universe, including research areas such as inflation, the cosmic microwave background (CMB), large-scale structure and the role of dark matter. Pierre Binétruy of the Astroparticle and Cosmology Laboratory, Paris, then presented an interesting new approach in which inflation can be understood in terms of models based on string theory and brane worlds.

Particle physicists and cosmologists alike have great expectations for the LHC at CERN. Daniel Denegri from the Saclay Institute for Research into the Fundamental Laws of the Universe gave an overview of the experiments designed to detect the Higgs and supersymmetric particles. The LHC is also expected to play a major role in the hunt for dark-matter candidates. Lars Bergström of Stockholm University reviewed some of the most frequently discussed candidates and possible detection methods.

The matter–antimatter asymmetry in the universe was the topic for DESY’s Wilfried Buchmüller. He discussed three different models for forming baryonic matter – electroweak baryogenesis, the Affleck–Dine mechanism and leptogenesis – and the prospects for falsifying them. Gino Isidori from INFN/Frascati contributed to the theme by addressing CP violation and flavour physics.

In a joint session, GSI’s Peter Braun-Munzinger and Wolfram Weise from the Technische Universität München focused on QCD. Braun-Munzinger presented recent experimental results on nuclear collisions at ultra-relativistic energies, showing that hadrons are produced in a transition



*Participants take a break to pose for the traditional photo. (Courtesy Excellence Cluster Universe.)*

from free quarks and gluons to a phase of bound quarks. Weise gave the theoretical perspective, reviewing recent results from computations in lattice QCD, in particular addressing the issue of phase transitions.

Cosmologist Thanu Padmanabhan from the Inter-University Centre for Astronomy and Astrophysics, Pune, delivered the “Inside story of gravity”. According to his findings, gravity can be described as the thermodynamic limit of the statistical mechanics of so-called “atoms of space–time”.

The production of the first nuclei in the universe came under scrutiny from Keith Olive of University of Minnesota. He looked at the open issue of primordial deuterium and lithium abundances that are not in accordance with the standard model of the universe. He included both conventional and exotic scenarios, the latter leading to a posteriori modification of the lithium produced in the first few minutes.

George Smoot from the Lawrence Berkeley National Laboratory reviewed current observations and future investigations of the CMB. He provided insight into the progress of the Planck satellite and the role that it will play in combination with results from the Wilkinson Microwave Anisotropy Probe. He also presented a new project to investigate polarization patterns in the CMB, which is scheduled by NASA for 2018.

The origin of gamma-ray bursts (GRBs) remains a controversial issue. In his diverting

talk CERN’s Alvaro De Rújula presented insights resulting from observations of GRBs and their afterglows by the Swift satellite. According to his findings, GRBs can be explained by the “cannon ball” concept. Roland Diehl from Max-Planck-Institut für extraterrestrische Physik, Garching, who was chair of the session, responded by delivering differing data from observational astronomy. The conflicting statements sparked off an interesting discussion among the audience.

Bernard Schutz from the Albert Einstein Institute, Potsdam, reported on gravitational-wave studies, outlining the ground-based detectors, LIGO and VIRGO, which are designed to observe merging binary neutron stars and black holes. The Laser Interferometer Space Antenna, which is planned for launch in 2018, will observe the merger of massive black holes.

Two talks covered astroparticle physics. Manfred Lindner of the Max-Planck-Institut für Kernphysik talked about neutrinos as a probe of new physics, looking both at recent results and at future developments. Angela Olinto of the University of Chicago reported on recent measurements of ultra-high cosmic rays by the Pierre Auger Observatory. These show a significant correlation between the arrival directions of cosmic rays and the distribution of nearby active galactic nuclei. According to Olinto, these results will have important implications for both astrophysics and particle physics.

## AWARDS



Krinsky (left), Röhrs (centre) and Vladimir Litvinenko, chair of the prize committee. (Courtesy DESY.)

## Brookhaven and DESY take FEL honours

Samuel Krinsky of the Brookhaven National Laboratory has received the 2008 Free Electron Laser (FEL) Prize. Sponsored by the International Free-Electron Laser Conference, held this year in Gyeongju, Korea, the prize is awarded in recognition of “outstanding contributions to FEL science and technology”.

Over the past 25 years, Krinsky and colleagues have contributed significantly to developing two types of FEL used in research: the self-amplified spontaneous-emission free-electron laser (SASE FEL), and the high-gain harmonic-generation free-electron laser (HGFG FEL). Since the mid-1980s, Krinsky has worked on the theory of the

SASE FEL, and devices are currently under construction in Europe, Japan and the US. There is also ongoing work in the US and Europe to develop HGFG FEL facilities.

On the same occasion the 2008 Young Investigator FEL Prize was awarded to Michael Röhrs “in recognition of outstanding contributions to free-electron laser (FEL) science and technology”. Röhrs was selected for his investigations into the charge distribution within electron bunches at the Free-Electron Laser in Hamburg (FLASH) at an unprecedented time resolution of 20 fs. The work was done at DESY as part of his PhD research at the University of Hamburg.

## Superstrings earn the 2008 Dirac Medal and Prize

On 8 August the Abdus Salam International Centre for Theoretical Physics (ICTP) announced the award of the 2008 Dirac Medal and Prize to Juan Maldacena of the Institute of Advanced Study, Princeton; Joe Polchinski of the Kavli Institute for Theoretical Physics, University of California, Santa Barbara; and Cumrun Vafa of Harvard University. The announcement of the winners is made each year on the birthday of Paul Dirac, who was a close associate and friend of ICTP. This year the award honours Maldacena, Polchinski and Vafa for their fundamental contributions to superstring theory, with studies that range from early work on orbifold compactifications, physics and mathematics of mirror symmetry, through D-branes and black hole physics, to gauge theory-gravity correspondence. In particular, the citation mentions their contributions to uncovering the strong-weak dualities between seemingly different string theories, which have enabled theorists to learn about regimes of quantum field theory that are not accessible to perturbative analysis. These developments have, for example, found applications in practical calculations in the fluid dynamics of quark-gluon plasma.

## Creutz receives this year's Gian Carlo Wick Gold Medal

The World Federation of Scientists (WFS) has chosen Michael Creutz, of the Brookhaven National Laboratory as the recipient of the 2008 Gian Carlo Wick Gold Medal Award. This is given annually to a theoretical physicist for outstanding contributions to particle physics. Creutz received the award at a WFS meeting held in Erice on 19–24 August.

Founded in 1973, the WFS is an association of more than 10 000 scientists from 110 countries the aim of which is to share knowledge among all nations so that everyone can experience the benefits of scientific progress. Gian Carlo Wick, a native of Italy, was an eminent theoretical



Michael Creutz was chosen by the WFS for the prestigious Gian Carlo Wick Gold Medal award. (Courtesy Brookhaven National Laboratory.)

physicist who led the Theory Group at Brookhaven from 1958 to 1970.

Creutz was honoured for his work on lattice QCD. Specifically, he first demonstrated that properties of QCD could be computed numerically on a four-dimensional lattice through computer-based Monte Carlo techniques. These computational methods have since been applied to numerous theoretical problems in physics, including the physics of Brookhaven's Relativistic Heavy Ion Collider, and they may prove to be relevant in the interpretation of new physics findings at the LHC.

# CERN researchers win prestigious ERC grants

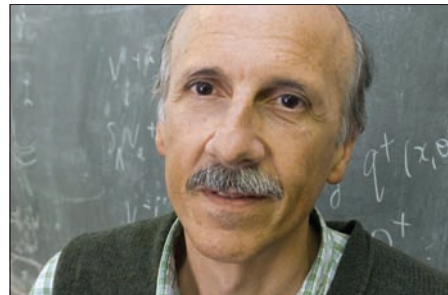
On 31 July the European Research Council announced the first successful candidates in the Advanced Grants competition in the domain of physical sciences and Engineering. Two of CERN's theorists, Sergio Ferrara and Ignatios Antoniadis, were among those named. Ferrara has received the grant for research with INFN in supersymmetry, quantum gravity and gauge fields, while Antoniadis was awarded it for studies of mass hierarchy and particle physics at the tera-electron-volt scale.

The first call for Advanced Grant proposals generated 997 applications in this domain by the deadline at the end of February. The peer-review process then ran from March to June. There were 105 successful candidates altogether, with only 13, including Ferrara and Antoniadis, in the area of fundamental constituents of matter.

Only two other theorists were successful with applications in particle physics: David Kosower at the Commissariat à l'Energie Atomique (CEA), Saclay, for modern methods for perturbative gauge theories, and Savas Dimopoulos of Stanford University, who will use his grant to establish a visitor programme at the University of Oxford for physics beyond the Standard Model. In the experimental field, Victor Malka at the Laboratoire d'Optique Appliquée/Centre National de la Recherche Scientifique received an award for his work on developing



Ferrara: supersymmetry and quantum gravity.



Antoniadis: studies of mass hierarchy.

particle accelerators with intense lasers.

Earlier in the year the ERC began to award Starting Grants aimed at up-and-coming research leaders, 2–9 years after achieving their doctorate. Geraldine Servant, also a theorist at CERN, received a grant for her work on the nature of dark matter and its manifestations. On the experimental side, Andre Mischke of Utrecht University received a grant for work with the ALICE collaboration. In particular, his research project aims to explore the dynamic properties of the quark–gluon plasma using sensitive experimental probes based on heavy-quark correlations.

More than 9000 applications were submitted for the Starting Grants. The ERC hopes to fund some 300 of these. Other beneficiaries in the area of particle physics include Iosif Bena of CEA/Saclay (black holes and string theory), Francesca Di Lodovico at



Andre Mischke (left) and Geraldine Servant.



Queen Mary, University of London (measurement of neutrino oscillations in the Tokai-to-Kamioka experiment), Livia Conti of INFN/Padova (studies of noise in gravitational-wave detectors) and Werner Rodejohann (studies of Majorana neutrinos).

Masaki Suenaga, a retired metallurgist who remains an active researcher at Brookhaven, has received the IEEE Council on Superconductivity Award for significant and sustained contributions to applied superconductivity. Suenaga spent much of his early career studying the superconductor niobium-tin, and his research resulted in a process to make the first industrial niobium-tin superconducting wire for use in high-field magnets, such as those used in accelerators. (Courtesy Brookhaven National Laboratory.)



## LETTER

### Good company

It is good to learn (*CERN Courier* July/August 2008 p7) that neutrons and protons prefer each other's company inside nuclei, but this is hardly a surprise.

As early as 1951, I learned from Viki Weisskopf in Les Houches that it is due in part to the tensor force that the neutron–proton system is bound while neutron–neutron and proton–proton are not. A printed version of this was to appear in the famous Blatt–Weisskopf book. That this happens also in nuclei was to be expected. Yes, it is nice that it is now observed but it is not such a big deal.

André Martin, CERN.

## OBITUARIES

## Gordon Munday 1922–2008

Gordon Lennox Munday est né en 1922 à Birmingham. Pendant la seconde guerre mondiale, il sert dans la « Home Guard ». Il travaille ensuite chez Philips avant d'intégrer l'Université de Birmingham et d'y obtenir une licence en physique et en chimie.

En 1955, à l'incitation d'un ami physicien, il rejoint à Genève l'équipe qui sous la direction de John Adams construit le PS, le Synchrotron à Protons du CERN. Il a la responsabilité de la construction du système à vide du futur accélérateur. Il établit les spécifications des constituants de ce système, sélectionne et visite les firmes chargées de les construire et supervise leur installation et leur mise en service.

Peu après le démarrage de cette nouvelle machine, le chef de division, Pierre Germain, lui confie la tâche de créer un groupe chargé d'aider les physiciens utilisateurs à préparer et réaliser leurs expériences. Son équipe gère les zones expérimentales, calcule, puis met en place et fait fonctionner les faisceaux dans lesquels les physiciens ont installé leur équipement. Cette activité délicate est cruciale car il s'agit à la fois d'exécuter au mieux le programme expérimental décidé par les autorités scientifiques du Laboratoire, de tenir compte des contraintes techniques formulées par les ingénieurs de l'accélérateur et d'essayer de satisfaire les demandes parfois contradictoires des physiciens.

Une troisième phase de sa carrière débute en 1973 lorsqu'il prend la succession de Peter Standley à la tête de la division Machine PS (MPS). Sous sa direction, le PS initialement conçu pour produire et accélérer des protons et des particules secondaires vers des zones expérimentales dédiées va se transformer progressivement en une machine à fonctions multiples.



Gordon Munday. (Courtesy Denise Munday.)

L'accélérateur devient capable de fournir des faisceaux adaptés à d'autres machines et surtout de satisfaire de nouveaux besoins que personne n'imaginait au moment de sa construction. Le PS devient ainsi injecteur de la nouvelle grande machine du CERN, le Super Synchrotron à Protons SPS. Le PS est également adapté à l'accélération d'ions légers, puis plus lourds et à la production des noyaux hautement instables étudiés dans le séparateur d'isotopes ISOLDE. C'est sous la responsabilité de Gordon Munday que se construit l'accumulateur d'antiprotons (AA). Cette machine permettra ultérieurement de réaliser le programme pp et conduira à la découverte des bosons W et Z et à l'attribution du prix Nobel à des physiciens du CERN. Ce sera encore sous son mandat qu'il sera imaginé d'utiliser le PS pour produire et pré-accélérer les électrons et les positons destinés à la grande machine suivante, le LEP.

Enfin et c'est probablement une partie moins connue de son action, il fait minutieusement analyser tous les aspects du fonctionnement du PS. Il lance un programme de développement et de consolidation qui permet à cette machine, conçue et construite

dans les années 1950, d'atteindre une fiabilité inégalée, supérieure à celle d'une grande centrale électrique moderne au fonctionnement beaucoup plus simple. Cette solidité technique et opérationnelle bâtie par Gordon assure le fonctionnement régulier du collisionneur protons-antiprotons Sp̄pS et du LEP jusqu'aux années 1990, bien après son départ à la retraite. Son héritage se prolonge bien au-delà, dans les années 2000, avec l'alimentation en protons et en ions du LHC par le PS.

Le rôle de Gordon au PS ne s'est pas limité à des aspects techniques et administratifs. Il a manifesté tout au long de sa carrière des qualités humaines et d'écoute envers ses collaborateurs qui lui ont assuré respect et attachement. Il a contribué à développer et à maintenir l'esprit de corps des membres de sa division, ce qui n'a pas peu influencé ses performances et ses succès. En 1981, à l'issue de son mandat au PS, il rejoint le bureau du Directeur Général et est chargé de diverses missions en relation avec la politique générale de l'Organisation et en particulier l'analyse des futurs besoins en personnel (Staff Policy Group) dans le contexte de restrictions que l'on sentait déjà poindre.

Parti à la retraite en 1987, il reste proche du CERN et de son personnel et accepte la présidence du GAC, le Groupement des anciens du CERN. Il sera leur porte-parole auprès des dirigeants de l'Organisation et réussira à maintenir la prise en compte de leurs préoccupations dans des circonstances qui se révéleront de moins en moins faciles.

Gordon Munday laissera le souvenir d'un scientifique et d'un responsable talentueux et apprécié. Nous adressons nos plus sincères condoléances à sa famille.

*Ses anciens collègues et amis du PS.*

## Klaus Blasche 1940–2008

On 27 July, Klaus Blasche, one of GSI's leading accelerator scientists, passed away at the age of only 68. For more than 40 years and in a number of leading positions, he contributed significantly to the development

of the accelerator system at GSI. Already in the 1960s, during his diploma and doctoral theses at the University of Heidelberg and while with the project group of Christoph Schmelzer, the first director of GSI, Blasche evaluated

the basic concepts of GSI's Universal Linear Accelerator (UNILAC). This linac came into operation in 1973 and was the first facility worldwide that was capable of accelerating all species of ions, from protons to uranium.

A few years later, discussions began on possible extensions to the UNILAC with a synchrotron, the Schwerionen-Synchrotron (SIS18), and a storage ring, the Experimentier-Speicherring (ESR). After the positive decision in 1985 to construct this synchrotron-storage ring, Blasche became the project leader of the synchrotron and high-energy beam transport complex, which was commissioned only three years later. Blasche also significantly influenced the layout of the further extension of the GSI facility by another synchrotron/storage ring complex for the Facility for Antiproton and Ion Research (FAIR) to be built at GSI.

With his deep knowledge of and



Klaus Blasche. (Courtesy G Otto, GSI.)

experience in accelerator physics and theory Blasche was a highly respected expert and member of various committees. As a member of the Organizing and Scientific Programme Committees of the European Particle Accelerator Conference (EPAC) series he contributed actively to the organization of EPAC 2000, 2002 and 2004. After his retirement in 2005, he continued to work on various accelerator-related subjects, such as the commercial concepts for accelerators used for hadron therapy.

With deep sadness, colleagues and friends take leave of him.

Hartmut Eickhoff, GSI.

## Francisco 'Paco' Ynduráin 1940–2008

Francisco Ynduráin, a leading Spanish physicist and a former member of the CERN Scientific Policy Committee, passed away on 6 June after a long illness, which he fought with dignity, courage and determination. With exemplary presence of mind, until the very end, Paco, as he was known to his friends, discharged his teaching duties and kept untouched his dedication to physics. His last dissertation at the Royal Spanish Academy of Sciences in October 2007 is a shining example of his passion for science.

Ynduráin studied mathematics at the University of Zaragoza and obtained his PhD in physics in 1964. Part of this work was done during a first visit to CERN in 1964. In 1966 he moved to the University of New York and in 1968 he gained a CERN fellowship. It was in the course of the latter that one of us (M. A-B) had the opportunity to meet him, and for 40 years he has enjoyed the privilege of Ynduráin's friendship and advice. After various positions at the universities of Madrid and Zaragoza, in 1971 Ynduráin became professor of theoretical physics at the Universidad Autónoma in Madrid. In 1996 he was elected a member of the Royal Academy of Sciences.

His scientific career has been extensive. He had outstanding mathematical skills, and physical intuition. He touched on many topics, although his preference was QCD, a subject on which he worked until the very end. His book on the subject, published in 1983, has become a classic, as have some of his reviews.



Paco Ynduráin. (Courtesy Felix Ynduráin.)

Ynduráin was the first among his theoretical colleagues to realize the need to promote experimental physics in Spain. When the country withdrew from CERN in 1969, he understood that the way of return required the consolidation of the fragile experimental community. In 1972 he started to collaborate with the group at the Centro de Investigaciones Energéticas

Medioambientales y Tecnológicas (CIEMAT). The International Meeting on Fundamental Physics was a joint undertaking of Ynduráin, Lucien Montanet, Juan-Antonio Rubio and one of us (M.A-B). The organization of this meeting, which is now heading for its 37th edition, revealed key features of Ynduráin: the quest for excellence, the rejection of mediocrity and the supreme value of decency.

Ynduráin played a role in the process that in 1983 brought Spain back to CERN, and he was instrumental in the formation of an experimental group at his university, always emphasizing the need for scientific quality and competitiveness. He was a very demanding and motivating teacher and was paramount in inspiring brilliant students. He helped establish a school of creative scientists who started the prestigious Institute of Theoretical Physics at his Universidad Autónoma in Madrid.

Ynduráin was also a man with many cultural interests, with a remarkable taste for music, literature and painting. His appreciation for literature made him a superb science writer. His publications to popularize science and his frequent articles in newspapers have received wide recognition.

Paco was a loyal friend and a fine and noble intellectual who partook in, and promoted, science in Spain. He will be gratefully remembered by those of us who had the great fortune to know him.

Manuel Aguilar-Benítez, CIEMAT, and Luís Álvarez-Gaumé, CERN.

## Yoji Totsuka 1942–2008

Yoji Totsuka, the former director-general of KEK and an outstanding contributor to major advances in neutrino physics, passed away on 10 July aged 66.

Totsuka was one of the first generation of students to study under Masatoshi Koshihara, the 2002 Nobel Prize laureate in physics, at the graduate school of the University of Tokyo. Receiving his PhD in 1972, he began his career working as a research associate at the University of Tokyo on the Double-Arm Spectrometer, an experiment at the DORIS electron-positron collider at DESY, Hamburg. Later he joined other experiments at DESY, including JADE – one of the four experiments that discovered the gluon in electron-positron collisions at the PETRA collider. The Tokyo group constructed an electromagnetic calorimeter for JADE using 3000 lead-glass blocks and 3000 photomultiplier tubes. Together with Hamamatsu photonics, a manufacturer of photomultiplier tubes, the Tokyo group made use of their experience in fabricating and handling this large number of tubes for JADE in subsequent experiments, in particular the OPAL experiment at LEP and the Kamiokande proton-decay and neutrino detector.

In 1981, Totsuka was called back to Japan by Koshihara to build Kamiokande, a novel (at that time) water Cherenkov detector using ultra-pure water as a target and a source



Yoji Totsuka. (Courtesy ICRR/University of Tokyo.)

of proton decay surrounded by some 1000 photomultiplier tubes. The observation of neutrinos from a supernova (SN 1987a) that had exploded 150 000 years ago in the Large Magellanic Cloud yielded the first direct information from the core of a collapsing star in its final stage of evolution. In 2002, Koshihara received a share of the Nobel Prize in physics for this achievement. In 1988 Totsuka took over the role of Kamiokande spokesperson from Koshihara and became a leading scientist there.

Totsuka's dedication to neutrino physics continued. He worked as Koshihara's right arm and led the experiment with physics insight, as well as technical excellence when it came to the design and construction of Super-Kamiokande, which brought Totsuka and his colleagues the discovery of atmospheric neutrino oscillations in 1998. Since its commissioning, Super-Kamiokande has been a centre for neutrino physics and Totsuka a spearhead of the neutrino physics community.

Totsuka worked on Kamiokande and Super-Kamiokande for more than 20 years. He was a man of iron will and decisive action. After a disastrous accident in 2001 that ruined more than half of the photomultiplier tubes, his strong will to recover the experiment as quickly as possible, together with his swift decision and action, persuaded the funding agency to support the reconstruction project that resulted in a sturdy new detector only five years later.

Totsuka served as the director of the Institute of Cosmic Ray Research at the University of Tokyo, from 1997 to 2000. In October 2002 he moved to KEK and worked as the director-general from 2003 to 2006. He was later professor emeritus of KEK and the University of Tokyo.

Totsuka was a prominent leader both in non-accelerator and accelerator neutrino experiments, and he received numerous awards for his work. He established the financial and international organization schemes for the KEK-to-Kamioka and Tokai-to-Kamioka accelerator-based long-baseline neutrino oscillation experiments. He was also very proactive in pushing forward international co-operation among members of many large particle laboratories. He was an outstanding physicist and his death brings the loss of a tremendous talent and a great force in the particle physics community world-wide. *Atsuto Suzuki, director-general KEK.*

## Florian Goebel 1972–2008

Florian Goebel, who is well known in the high-energy physics community, lost his life in an accident at work on the MAGIC-II telescope on the island of La Palma in the Canary Islands on 10 September 2008.

Born in Cologne in October 1972, Florian studied physics at the University of Heidelberg. Working in astroparticle physics on a Fulbright fellowship he later graduated from the State University of New York in Stony Brook. In 2001 he joined the ZEUS experiment at DESY in Hamburg, where he was involved in the construction and installation of the ZEUS Forward Plug Calorimeter. His doctoral thesis won the



Florian Goebel. (Courtesy Karl Goebel.)

2001 DESY prize for submitting the best thesis of the year.

In 2002, Florian joined the MAGIC project at the Max Planck Institute for Physics in Munich (MPP), contributing to the commissioning and debugging of the first MAGIC telescope. His work on the development and later upgrade of the data-acquisition system greatly improved the data quality and enhanced the sensitivity of the telescope.

Using the MAGIC telescope to observe the spectra of distant sources, Florian and his colleagues studied the extragalactic background light, which reveals information

about the star-formation rates and the structure formation of the universe. He proposed and undertook monitoring of the bright nearby active galaxies to search for very fast flares in order to test the quantum gravity effect and to see the correlation between high-energy gamma rays observed by MAGIC and high-energy neutrinos observed by the AMANDA and IceCube experiments.

For the past three years, as a project manager, Florian was responsible for the construction of the MAGIC-II telescope. He scheduled the production, delivery and installation of all elements of the telescope, mirrors, electronics, camera and all necessary software. He designed and produced the camera for the new telescope together with the engineers and technicians at the MPP. Just days before the official inauguration of the

telescope, a tragic accident occurred as he was finishing work on the instrument. Out of respect for Florian, the collaboration cancelled the inauguration ceremony.

Florian was an exceptionally friendly and enthusiastic collaborator and a leader with multiple interests in and beyond physics. A brilliant physicist and warm-hearted person, he will be deeply missed.  
*His colleagues and friends.*

## NEW PRODUCTS

**Cryocomp** has released a new vacuum-jacketed, mini-liquid-helium valve. The C5000 series, originally known as the CV9, has been redesigned to reduce heat leak and eliminate seat leak. The small, efficient valve is best suited to liquid-helium and nitrogen transfer lines, and is available in globe or angle pattern with manual and pneumatic operation. For further information, see [www.cryocomp.com](http://www.cryocomp.com).

**Hidden Analytical** has announced its ESPION Langmuir-style probe, which automatically reports critical plasma characteristics such as electron density, temperature and energy distribution, ion density, and plasma potential. Fast on-board, software-controlled timing circuitry with an acquisition trigger resolution of 62.5 ns enables ESPION to provide high-resolution segmented temporal analyses in pulsed plasma, at frequencies as high as 3 MHz. For further details contact Peter Hatton, tel: +44 1925 445

225, e-mail [info@hidden.co.uk](mailto:info@hidden.co.uk) or see [www.HiddenAnalytical.com](http://www.HiddenAnalytical.com).

**Janis Research Company Inc** has announced the HE-3-SSV-CCR2 cryogen-free helium-3 cryostat. This second-generation system offers significant new features. These include a pulse tube cryocooler to minimize vibration and additional cooling power to pre cool the helium-3 before it is liquefied. The system has an operating range of 0.3K–300K and can hold a base temperature of 300 mK for 50 hours. A LabVIEW-compatible program for system operation is included. For more information contact Zuyu Zhao, e-mail: [zzhao@janis.com](mailto:zzhao@janis.com), or see [www.janis.com/news0808b.html](http://www.janis.com/news0808b.html).

**Spellman High Voltage Electronics Corporation** has extended its modular product line with the introduction of the UM Series of printed-circuit-board-mountable, high-voltage modules. The series spans

an output voltage range of 62V–6kV in three power offerings of 4, 20 and 30 W. An optional enhanced interface provides current-programming capability and positive polarity, buffered, low output-impedance voltage and current monitor signals. A second voltage-programming input is also provided for negative polarity. For further information, see [www.spellmanhv.com/um](http://www.spellmanhv.com/um), or call +1 631 630 3000.

**TREK Inc** has introduced a new electrostatic voltage sensor, Model 875. Designed for the in-line monitoring of electrostatic charge build-up it features a measurement probe with automatic calibration technology. Designed with DIN packaging, it mounts on a 35 mm DIN rail, and covers a range of  $\pm 500$  V DC or peak AC, with an accuracy of  $\pm 5\%$  and a speed of 25 ns. Buffered output voltage and current monitors allow remote monitoring and alarm functions. For more information, see [www.trekinc.com/products/875.asp](http://www.trekinc.com/products/875.asp).

## MEETINGS

The **5th Vienna Central European Seminar on Particle Physics and Quantum Field Theory** is to be held in Vienna on 28–30 November. The title is Highlights in Computational Quantum Field Theory. There will be presentations on Monte Carlo event generation for collider experiments and Grid technology. In perturbative quantum field theory, the automation of loop and precision calculations will be covered. At the non-perturbative level, advances in lattice QCD, simulations of M-theory, and supergravity will feature. For further details, see [www.univie.ac.at/vienna.seminar/2008/](http://www.univie.ac.at/vienna.seminar/2008/).

The **X-Band Structures and Beam Dynamics Workshop** will be held at the Cockcroft

Institute of Accelerator Science and Technology, Daresbury, on 1–4 December. This is the 44th ICFA Workshop under the sponsorship of the ICFA BD panel. The purpose is to explore a range of RF and beam dynamics issues associated with X-band accelerators. Both fundamental and technological aspects of linacs and drive beams will be explored through invited talks and contributed papers. For further information, see [www.cockcroft.ac.uk/events/X-Band/](http://www.cockcroft.ac.uk/events/X-Band/).

**CHEP'09**, the 17th International Conference on Computing in High Energy and Nuclear Physics, will take place on 21–27 March 2009 in Prague. The CHEP conferences provide an international forum to exchange information on computing

experience and needs for the high-energy and nuclear-physics community, and to review recent, ongoing, and future activities. A WLCG Meeting will be held on from 21–22 March prior to CHEP 2009. For further information see [www.particle.cz/conferences/chep2009/](http://www.particle.cz/conferences/chep2009/).

**HIAT09**, the 11th International Conference on Heavy Ion Accelerator Technology, will take place in Venice on 8–12 June 2009. The HIAT conferences focus on experience at existing facilities, achievements in heavy-ion accelerator physics and technology, progress on approved projects, trends in the design of heavy-ion accelerators, and their main systems and components. For further information, see <http://hiat09.lnl.infn.it/>.