



Longer - Faster - Purer



Susanne Kreim, the ISOLTRAP local group leader at CERN in front of a part of ISOLTRAP device.

The MR-ToF-MS, a new ion trap, has been integrated into ISOLTRAP, the experiment that performs accurate mass measurements on short-lived nuclides produced at ISOLDE. When used as a mass separator and spectrometer, it extends ISOLTRAP's experimental reach towards the limits of nuclear stability.

When mass measurement experiments like **ISOLTRAP*** are placed in an on-line radioactive ion-beam facility they face a major challenge: the efficient and fast transfer of the nuclide of interest to the location where the mass measurement is performed. The biggest yield of one selected nuclide, without contaminants, needs to be transferred to the set-up as quickly as possible in order to measure its mass with the greatest precision. Recently, the ISOLTRAP collaboration installed a new device that provides a faster separation of isobars.** It has significantly

improved ISOLTRAP's purification speed and given access to more exotic species.

"The multi-reflection time-of-flight mass separator (MR-ToF MS) is a valuable addition to the ISOLTRAP set-up," says Susanne Kreim, a CERN fellow and the ISOLTRAP local group leader. "Measurements on nuclides with

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VISIT ISOLDE!

CERN Internal Communication is organising a visit to ISOLDE for CERN access-card holders. More details available on page 3.

To participate, send an email to bulletin-editors@cern.ch.



A lot to look forward to

CERN moves from momentous year to momentous year, and although 2013 will be very different for us than 2012, there is still a lot to look forward to. As I write, the proton-lead run is just getting underway, giving the LHC experiments a new kind of data to investigate. But the run will be short, and our main activity this year will be the start of the LHC's first long shutdown.

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A lot to look forward to

This is the first year I can remember in which all of CERN's accelerators will be off. The reason is that there is much to be done: the older machines need maintenance, and the LHC has to be prepared for higher energy running. That involves opening up the interconnections between each of the machine's 1,695 main magnet cryostats, consolidating all of the 10,170 splices carrying current to the main dipole and quadrupole windings, and a range of other work to improve the machine. The CERN accelerator complex will start to come back to life in 2014, and it's fair to say that when the LHC resumes running in 2015, it will be more than a simple restart. We will effectively be starting up a brand new machine.

No LHC running does not equate to no physics in 2013. The experiments have large amounts of data to analyse, so we can expect the steady flow of results to continue unabated. I was asked at the December Council meeting when I expected to drop the 'like' from 'Higgs-like', and my answer was that we'll do that when we have strong evidence for the spin of the new particle. I'm hopeful that will come later this year.

Another important activity for 2013 is the update of the European Strategy for Particle Physics. Much of the hard work has already been done by the various working groups, and next week, the overall strategy group convenes in Erice (Italy) to write the first draft of the strategy update. This will be presented to Council in March for consideration and will then go to a special meeting of the Council in Brussels in May for approval. The CERN Council meeting in Brussels aligns with a meeting of the European Competitiveness Council, giving us a chance to present the strategy to key science and technology decision makers.

Last, but by no means least, the long shutdown gives us an opportunity to show the world more of our laboratory. Last year, some 80,000 public visitors came to CERN, we welcomed 169 VIP visits, and 504 media visits. This year promises to be even busier, and our visits service, protocol and press offices are putting special arrangements in place to welcome as many people as we can. We are also organising a series of events, starting with TEDxCERN on 3 May, moving on to the inauguration of the Passport Big Bang tourist itinerary on 2 June, and culminating with a series of Open Days, kicking off with the European Researchers' Night in September. All in all, it's going to be a full, and fascinating year.

Rolf Heuer

Longer - Faster - Purer

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half-lives well below the minimum length of a measurement cycle are hampered due to losses by decay. The MR-ToF MS now provides a much faster separation of the isobars and overcomes this half-life limitation."

"The MR-ToF MS separates the isobars from the ISOLDE beam using electrostatic ion mirrors to prolong their flight path," explains Robert Wolf, a PhD student from the University of Greifswald (Germany) where the newest ISOLTRAP section was constructed and built. His Greifswald colleague Frank Wienholtz, also a PhD student, adds: "As the isobars' velocities depend on their masses, a long flight path is needed to separate the sought-after ion from other ions with slight mass differences. Thanks to the mirrors, the ion trajectories can be thousands of times longer than the length of this table-top device. During recent tests on the device performance, we made the ions travel 34 km! This is longer than a single spin in the LHC ring, but our device is just one metre long."

More recently, the ISOLTRAP collaboration integrated an ion detector behind the MR-ToF mass analyzer to use it as a spectrometer. Measuring masses with huge precision, it reaches new exotic species and considerably enhances ISOLTRAP's mass

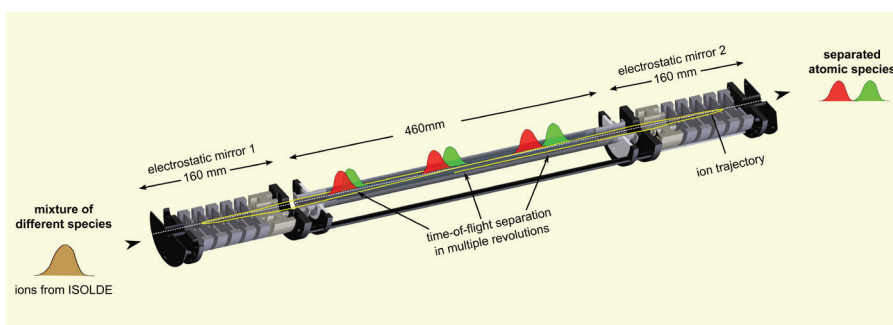
measurement capability. "Currently, the MR-ToF MS is the only such device installed in an on-line facility, which was already able to determine the previously unknown mass of the ion with yields as low as a few ions per minute and half-lives below 50 ms," says Susanne Kreim.

With the MR-ToF MS, the ISOLTRAP experiment will have access to yet undiscovered nuclei at the outskirts of the nuclear chart. More than just improving ISOLTRAP's performance, it opens up the possibility of investigating the limit of nuclear stability, the so-called "dripline", where the nuclear force is no longer strong enough to keep protons and neutrons bound in a nucleus.

**The ISOLTRAP experiment is installed in the ISOLDE hall and is run by the ISOLTRAP collaboration consisting of about 20 scientists from CSNSM Orsay, FAIR and GSI Darmstadt, ISOLDE, KU Leuven, MPIK Heidelberg, RIKEN Nishina Center, Technical University of Dresden, University of Greifswald, University of Istanbul, and University of Manchester.*

***Isobars are nuclides with the same number of nucleons but a different combination of protons and neutrons.*

Caroline Duc



Therapeutic use of radioactive isotopes

In December, researchers from ISOLDE-CERN, the Paul Scherrer Institute (PSI) and the Institut Laue-Langevin (ILL) published the results of an *in vivo* study which successfully proved the effectiveness of four terbium isotopes for diagnosing and treating cancerous tumours.

Tb 149 4.2 m 4.1 h ϵ β^+ α 3.99 β^+ 1.8 γ 796; 165... 165...	Tb 152 4.2 m 17.5 h β^- 283; 160... ϵ β^+ 2.8... ϵ ; β^+ ... γ 344; γ 344; 586; 411... 271...
Tb 155 5.32 d ϵ β^- 87; 105;... 180, 262	Tb 161 6.90 d β^- 0.5; 0.6... γ 26; 49; 75... ϵ

Four terbium isotopes suitable for clinical purposes.

"ISOLDE is the only installation capable of supplying terbium isotopes of such purity and intensity in the case of three out of the four types used in this study," explains Karl Johnson, a physicist at ISOLDE. "Producing over a thousand different isotopes, our equipment offers the widest choice of isotopes in the world!" Initially intended for fundamental physics research, ISOLDE has diversified its activities over time to invest in various projects in the materials science, **biochemistry** and **nuclear medicine fields**.

The proof-of-concept study has confirmed that the four terbium isotopes 149Tb, 152Tb, 155Tb produced by ISOLDE and 161Tb produced by ILL can be used in matched pairs to simultaneously diagnose and treat tumours. Having attached itself to a cancerous cell, one of the isotopes emits radiation detectable by medical imaging instruments while the other produces short-range radiation which destroys the surrounding cells. This makes it possible to monitor the status of the cancerous tumour throughout the patient's treatment and to adapt the prescribed terbium isotope dose accordingly.

"Although the first clinical trials with terbium isotopes were performed in the 1990s, the project only really took concrete form two years ago when activities started in the framework of the PSI-ILL-ISOLDE collaboration," explains Karl Johnston. "The main difficulties were logistic rather than of a physics nature. For instance, as isotopes have very short lifetimes, it was essential to reduce the timelag between their production and their use by medical staff to the absolute minimum. So the laboratories performing the clinical tests had to be located no more than three hours away by car! We therefore had to produce the terbium

samples between 4 a.m. and 8 a.m. Then we had to pack the samples within 30 minutes with the help of CERN's Radiation Protection Group. If everything went according to plan, the isotopes were delivered to the PSI laboratories by 11.30 a.m.!"

Science and patience. This proof-of-concept study, jointly carried out by experts in the physics and nuclear medicine fields, has confirmed the therapeutic and diagnostic potential of terbium. However there is a long way to go before terbium can be used in our hospitals because the quantities produced by ISOLDE are too small to allow large-scale statistical studies to be performed. We will have to await the resumption of activities following the performance-enhancement upgrades during the LHC shutdown. Next appointment in June 2014.

Caroline Duc

Terbium is tops!

Terbium (Tb) is the only element in the Mendeleev periodic table that has four isotopes suitable for clinical purposes. The nuclear decay characteristics of these four isotopes mean that all the nuclear medicine procedures can be covered. 155Tb and 152Tb emit gamma rays detectable by gamma cameras or PET scanners. While 161Tb produces, *inter alia*, beta minus particles which damage the surrounding cells over a few millimetres, 149Tb produces short-range alpha particles which allow very localised destruction of the cancerous cells

Visit ISOLDE!

CERN Internal Communication is organising a visit to ISOLDE – an opportunity for you to see the CERN set-up that can produce over 1000 different isotopes!

If you wish to participate, you can sign up for a visit by sending an e-mail to: bulletin-editors@cern.ch. Note that the visits will take place between 18 and 22 February, and will be open only to CERN access-card holders. The visit will include an introduction by experts and a tour of the ISOLDE set-up.

LHC Report: Ion Age

The LHC starts the New Year facing a new challenge: proton-lead collisions in the last month before the shutdown in mid-February.

Commissioning this new and almost unprecedented mode of collider operation is a major challenge both for the LHC and its injector chain. Moreover, it has to be done very quickly to achieve a whole series of physics goals, requiring modifications of the LHC configuration, in a very short time. These include a switch of the beam directions halfway through the run, polarity reversals of the ALICE spectrometer magnet and Van der Meer scans.

The Linac3 team kept the lead source running throughout the end-of-year technical stop, and recovery of the accelerator complex was very quick. New proton and lead beams were soon ready, with a bunch filling pattern that ensures they will eventually match up in the LHC. The LEIR machine has even attained a new ion beam intensity record.

On Friday 11 January the first single bunches of protons and lead nuclei were injected into the LHC and successfully ramped to full energy, a very encouraging sign. Over the following night the LHC operations and beam physics teams sprang into action to commission and measure the optics through the completely new squeeze sequence which now includes lower β^* values in the ALICE and LHCb experiments. The data were later used successfully to correct the squeeze optics to the quality required for physics operation. A new feature of proton-lead operation, arising from the slightly different speeds of the particles, is the need to run the two beams "off-momentum" with opposite orbit offsets. A new correction scheme to correct the resulting orbit perturbations has worked well.

Unfortunately, starting at the weekend, substantial amounts of beam time have been lost due to various power and cryogenics failures, slowing down what would otherwise have been rapid progress through the commissioning plan. The frequency of re-schedulings and unforeseen interventions, driven by the urgency of the programme, has made heavy demands on many CERN teams.

The first collisions of low intensity proton and lead are nevertheless expected imminently and the LHC will then push ahead into new beam physics territory, exploring higher intensity with asymmetric beams.

John Jowett for the LHC team

ISOLDE's rarest isotopes

The ISOLDE physics section (PH-SME-IS) has recently observed an unusual transformation... one that may well be a sign of things to come for CERN.



The ISOLDE PH team, from left to right: Jennifer Weterings (user support), Susanne Kreim (research fellow), Marek Pfützner* (scientific associate), Maria Garcia Borge (team leader), Elisa Rapisarda (research fellow), Magdalena Kowalska (physics coordinator), Jan Kurcewicz* (applied fellow), Monika Stachura (future applied fellow). Not in the photo: Kara Lynch (PhD student).

Although more and more women are going into the physical sciences, it's no secret that it remains a male-dominated field. But over the past six months, the ISOLDE PH section has become an exception to this rule: with female physicists outnumbering their male colleagues 3 to 1.

"We're probably one of the few teams at CERN where the personnel is mostly female," says Magdalena Kowalska, the ISOLDE Physics Coordinator. "We have a female group leader, co-ordinator and user-support officer (who's also a physicist), as well as one female PhD student and two research fellows. In December, we even got a new applied fellow who's also a woman."

CERN's Diversity Programme leader, Sudeshna Datta-Cockerill, was encouraged

to learn about the team's new dynamics: "This is really a sign that the Organization is gradually meeting the strategic objectives set out by the Diversity Programme: achieving an improved gender distribution across the Organization and encouraging more gender role models."

As personnel figures continue to show more and more women joining CERN as staff members, fellows and users alike, we should come to expect further female-dominated groups. Before long, your team may too look like the ISOLDE PH section!

* ISOLDE's rare isotopes.

Katarina Anthony



Ombuds' corner: Consider mediation - some rules

Mediation is a structured process in which an external party, called a mediator, helps participants generate and evaluate options that would allow them to reach a mutual agreement. It is an informal and confidential process.

The mediator does not have the power to impose an agreement on the parties, who should find it by themselves. However, the mediator controls the process. He arranges the meetings in agreement with the parties, and coordinates the details (concerning the speaking times, for example) and ensures that the parties respect of the rules which have been agreed on. He also favours advancing of the process towards a solution.

The mediation process is centred on the search for a solution and a mutual agreement. In such a process, the mediator takes a neutral and impartial position, and does not advocate for a single party. He favours good communication between the parties, and will ensure that mutual respect is maintained and that the correct language is used during the discussions. The mediator can also, on occasion, reformulate sentences made by the parties so everyone can easily listen to them. He helps the parties to find win-win solutions to their worries. Such solutions are the most favourable ones for long-term agreements and respect from all participants. Finding these solutions is the responsibility of the parties themselves, with the help of the mediator.

Some rules of conduct should be agreed beforehand and, most importantly, participation must be made in good faith. The first thing that the mediator has to observe is whether or not this good faith exists; else there is no point in beginning mediation.

The rules are quite obvious: confidentiality of the debates, no interruption when someone talks, mutual respect, correct language (including body language), and proof of a positive attitude in the search for a common solution. It is also essential that the participants have the power of deciding. Effective mediation cannot make sense if the participants are under the impression that decisions concerning them are taken outside the meetings by other people.

The subjects for discussion are brought in by the parties, who agree to stay open to every debate. When the list of the problems is considered complete, as well as their priority, the discussion can start along a process coordinated by the mediator. It is a good practice that the mediator first discusses with each party separately. Such discussion often lets the participants relieve any pressure.

At the end of the mediation, if an agreement is found, the parties can decide whether or not they would like it to be written, and to whom such a summary should be sent to.

The Ombuds offers mediation to anyone who would like to resolve his/her issue with someone through a confidential and informal process. Generally it is helpful, and certainly in the interest of the parties, and of CERN.

Conclusion:

Mediation, or facilitated discussion, could be more widely considered at CERN to resolve conflicts in an informal way. The Ombuds is here to help. Consider discussing such possibility with him in cases of dispute, misunderstanding or lack of communication.

Vincent Vuillemin

A Short Tale of the Black Sheep of -ITY

Once upon a time, computer engineers of the ancient world used the abbreviation of “-ITY” ([eye-tee]) as a shorthand for “Information Technology”. It was an appropriate abbreviation as it reminded everyone of the core purposes and aspects of information technology, which made not only the computer engineers, but also their clients, happy.

Whenever the engineers were programming a software application or setting up a computing service to cover the needs of their clients, they stuck to the four paradigms of -ITY:

* “Functional-ITY”, i.e. ensuring that a service or application has a purpose and a justification of being;

* “Avalabil-ITY”, i.e. ensuring that this service or application is functional whenever a client wants to use it;

* “Usabil-ITY”, i.e. ensuring that this client does not get fed up by a badly designed user interface or disappointed by the service’s or application’s workings, and, thus, avoiding that either is abandoned;

* “Maintainabil-ITY”, i.e. ensuring that the developers do not get fed up by the application’s architecture or service configuration and, thus, avoiding that either is orphaned.

It was to the benefit of everyone. Following those four paradigms guaranteed properly designed applications and services. A win-win situation and a paradise for clients.

But with the dawn of the Internet, the nice-and-cosy world of -ITY was threatened. Evil coders and attackers entered the scene and started to harass and violate the four paradigms. With evil coders introducing vulnerabilities and bugs in applications,

suboptimal “Functional-ITY” was exploited by attackers. Denial-of-service attacks diminished the “Avalabil-ITY” of services. “Usabil-ITY” became a double-edged sword of friendly use-cases as well as misguided abuse-cases. And “Maintainabil-ITY” was under pressure as more and more services and applications went out of operation in order to recover from successful attacks.

It did not take long for computer engineers to establish a fifth paradigm meant to protect the other from the wrong-doers of the Internet: “Secur-ITY”. But “Secur-ITY” was clumsy and has never been able to fit in with its brothers. When “Functional-ITY” was key, “Secur-ITY” made it complicated. When “Avalabil-ITY” was asked for, “Secur-ITY” shouted “reboot!”. And when “Usabil-ITY” had the priority, “Secur-ITY” put up hurdles and barriers. Only “Maintainabil-ITY” was happy, as it would benefit whenever “Secur-ITY” introduced a break. “Secur-ITY” tried hard to overcome its weaknesses and disadvantages, but to no avail... Instead it was perceived as the one “-ITY” to rule them all... and in the darkness bind them.

“Secur-ITY” became the Black Sheep of the family. Computer engineers despised it and ignored it, as “Secur-ITY” introduced more problems than it did good. It was of no help. Years passed by in darkness with all the paradigms struggling for survival. Today, the

question is: can applications and services be sustained without protection and defence? Or will evil prevail in the end and kill the paradigms one after the other? Shouldn’t computer engineers stop and reflect on how “Secur-ITY” can become inherent partner of the other paradigms?

Will there is a happy ending? Will evil will seal the doom of “-ITY”? Will “Secur-ITY” ever be welcomed back into the flock? Will “Functional-ITY”, “Avalabil-ITY”, “Usabil-ITY”, “Maintainabil-ITY” and “Secur-ITY” live happily ever after? It is up to you.

Recall from last year’s articles (“**Security** is YOU! and **Why “Security” is not ME...**”), that “Secur-ITY” needs your help. At CERN or at home, “Computer Security” is not complete without YOU!

For further information, questions or help, please check our web site or contact us at Computer.Security@cern.ch.

Computer Security Team



News from the Library

News from the Library: Microsoft products no longer on sale at the Bookshop

As you might know, for some time the Bookshop also acted as a point of sale of Microsoft products. Please note that this is no longer the case.

The Swiss distributor of Microsoft software - DirAction AG - provides a website where CERN users can acquire copies of Microsoft software for home use. This website is available in three languages - English, French and German - and accepts payments by credit card or by money transfer from a bank account or PayPal.

Should you have any problems or questions relating to this website, you can contact the DirAction Team directly at + 41 43 299 44 00. Note that the CERN Service Desk will not be able to assist you as this is a service provided by DirAction rather than CERN IT.

CERN Library

Gordon Fraser (1943-2013)

We were deeply saddened to learn that Gordon Fraser passed away on 3 January. During 25 years at CERN, until his retirement in 2002, he made many valuable contributions to the laboratory, in particular as editor of CERN Courier.



Gordon's life in science began at Imperial College London, where he obtained his PhD with the theory group of the future Nobel laureate Abdus Salam. He then spent time at Tel Aviv University in Yuval Ne'eman's group and at Brighton University, before changing career to become a journalist, at first for Computer Weekly in London. He moved into scientific editing at the Rutherford Appleton Laboratory in 1975 and it was from there

that he was hired to join the publications team at CERN in 1977.

By 1982 Gordon had become the editor of CERN Courier. During his time at the helm, both particle physics and the Courier changed considerably. Under his careful stewardship aspects of publishing were outsourced, leading to an attractive, professional magazine that has a worldwide reputation.

These developments required the creativity and sharp writing skills for which Gordon became well known, not only through the Courier but also through his books about particle physics. The Search for Infinity (with E. Lillestøl, I. Sellevåg, M. Beazley 1994), an

illustrated popular introduction to particle physics and cosmology, was translated into nine languages.

Gordon took early retirement in 2002 to concentrate on writing books, most recently Quantum Exodus – Fugitive Jews, the Atomic Bomb, and the Holocaust (OUP 2012), which he presented in the CERN library last summer.

A well known figure at CERN, he was a keen runner, often seen powering around the Meyrin site on his lunchtime run. He will be missed by many, especially by those who were fortunate enough to have worked with him.

His colleagues and friends

Max Reinharz (1923-2012)

Max Reinharz was born in Vienna, Austria, in 1923. In 1939 he was obliged to emigrate to the UK. At the beginning of the Second World War he was interned as an enemy alien and then deported to Australia at a time when the British feared an invasion by Germany. He returned to the UK in 1943 and joined the British Army. After he was demobbed in 1947, he studied physics in Vienna, where he took his doctorate in 1953.



After working in Brussels, at the physics Institute of Genoa and the University of Pisa, he joined CERN in 1960 as a fellow and in 1964 became a senior physicist in the NP Division. His

name is associated with many publications, such as those of the CERN neutrino experiment and the CERN-Geneva-Lund collaboration to verify T symmetry conservation in lambda decays.

He then joined a small team in the Proton Synchrotron Division (MPS) responsible for assisting external physics groups to prepare and install their experiments. At that time, the synchrotron operated with internal targets. The secondary particles emitted had to be selected and guided in beams adapted to the experiments prepared by physicists from other institutes. It was this team's task to calculate, build and adjust these beams.

In 1976 he joined Giorgio Brianti's group which was responsible for creating and sub-

sequently operating the SPS's experimental areas, where inter alia he successfully introduced the use of tertiary beams. At the SPS he also took part in several important experiments, including in the measurement of particles produced by 400 GeV protons on a beryllium target (NA20).

But Max's interests were not limited to particle physics. He was imbued with a profound sense of justice. He took part in Staff Association activities and served a term as the Association's President between 1977 and 1978. Not only did he defend the interests of his colleagues but he also maintained a positive and constructive dialogue with the Management while preserving staff unity at a time when some staff members saw the relations with the Management in terms of class struggle. He pursued his commitment to human rights in the framework of the Yury Orlov Committee set up to campaign for the liberation of his Russian colleague, who had helped to found and had chaired the Moscow Helsinki Watch Group, the committee set up to monitor implementation of the 1975 Helsinki Accords, and who had been unjustly imprisoned.

His post brought him into direct contact with physicists coming to CERN to carry out

their experiments and he played a key role in CERN's efforts to reconstruct European science and to re-establish the links between Europeans, which had been interrupted by the war. However these activities soon went beyond the limits of the Member States to include Eastern Europe and the Soviet Union. In particular he contributed to establishing relations with China when, after the death of Mao, that country was beginning to modernise and open up to the world.

These activities were not limited to straightforward official contacts: his capacity for human contacts allowed him to establish warm close personal relationships. After his retirement at the end of 1988, he continued to maintain and develop contacts with his many friends at CERN and throughout the world. Although his friends might not always have agreed with all his views, they appreciated and admired the pertinence of his analyses, his rectitude, his untiring efforts to create a better world and above all his rich gift for friendship.

His friends and former colleagues at CERN

Paul Levaux (1931-2012)

Mr Paul Levaux, a long-standing member of the Belgian delegation to the Finance Committee and Council, passed away on 3 December 2012.



Paul Levaux first attended the CERN Council and Finance Committee in June 1970 as an Advisor, although his association with CERN goes back to the 1960s.

From October 1970 until December 2007 he represented Belgium in the capacity of Council and Finance Committee delegate. He was Finance Committee Chairman from 1971 to 1973 and President of Council from 1975 to June 1978. He also served as Vice-President of Council from January 1978 until December 1980 with a second term from January 1994 to December 1997.

In addition to holding these important offices, Paul Levaux participated in an

extensive number of CERN working groups. In particular, he was a member of the Working Group on Procedures for Payment of Member States' Contributions (2000-2001) and Working Group on the Review of the Tasks and Working Methods of CERN's Governing Bodies and Committees (July-December 2003), Chairman of the Study Group on Pension Fund Governance in 2007, and Chairman of the Working Group on the Procedure for future Elections of the President of Council and the Chairs of the CERN Committees in 2007.

A substantial part of Paul Levaux's time at CERN was devoted to matters relating to the Pension Fund. As Chairman of the Governing Board of the Pension Fund from 1989 until 2002, Paul Levaux was responsible for organizing and implementing the new structure of the Fund, giving it greater operational autonomy and placing it under the direct authority of the Council. Paul Levaux's services in the pension field were

called upon again very recently when he made an important contribution to the setting-up of the new governance structure for the Pension Fund approved by the Council in 2007, whose final report now bears his name as the "Levaux Report". As doyen of the Council and Finance Committee by a very considerable margin, Paul Levaux's departure from CERN as a delegate represented the loss of one of CERN's most distinguished and long-standing Member State representatives, a true "mémoire du CERN".

Throughout his long association with CERN, Paul Levaux remained a strong supporter of the Organization and its activities and, in honour of his achievements, he was invited back to CERN last June for the Council dinner. Gratifyingly, he lived to witness the first results from the LHC, whose announcement brought him great satisfaction.

CERN Management, Council President and Delegates, and his colleagues and friends



CERN Health Insurance Scheme (CHIS) Monthly Contributions – Changes for 2013

Following the 2010 five-yearly review of financial and social conditions, which included the CERN Health Insurance Scheme (CHIS), the CERN Council decided in December 2010 to progressively increase the level of contributions over the period 2011-2015.

For 2013, the contribution rate of active and retired CHIS members will be 4.55%. The amounts of the fixed premiums for voluntarily insured members (e.g. users and associates) as well as the supplementary contributions for spouses with income from a professional activity increase accordingly:

1. Voluntary contributions

The full contribution based on Reference Salary II is now 1116 CHF per month. This fixed amount contribution is applied to voluntarily affiliated users and associates with normal coverage. Half of this amount (558 CHF) is applied to voluntarily affiliated

users and associates with reduced coverage. Finally, an amount of 446 CHF is applied to children maintaining their insurance cover on a voluntary and temporarily basis. More information on the web

2. Supplementary contributions

The supplementary contribution for the spouse or registered partner of a staff member, fellow or pensioner is now as follows, depending on the spouse's monthly income:

- up to 2'500 CHF (inclusive): 0 CHF
- more than 2'500 CHF and up to 4'250 CHF: 152 CHF
- more than 4'250 CHF and up to 7'500 CHF: 265 CHF
- more than 7'500 CHF and up to 10'000 CHF: 417 CHF
- more than 10'000 CHF: 558 CHF

More information on the web or contacting Human Resources Department (tel. 74719).

Human Resources Department

Operational circular n°10 – Principles and procedures governing investigation of fraud

Operational Circular No. 10 entitled "Principles and procedures governing investigation of Fraud", approved by the Director-General following discussion at the Standing Concertation Committee meeting of 4 December 2012 and entering into force on 1 January 2013, is available on the intranet site of the Human Resources Department:

This circular is applicable to any person working at or on behalf of CERN.

The purpose of this new operational circular is to state the definition of fraud and to set the Organization's fraud investigation process pursuant to the **CERN Anti-fraud Policy** and in accordance with the principles of due process.

*Department Head Office
HR Department*

CERN anti-fraud policy

In 2011, a working group on improved fraud prevention and management was established. The group was composed of the Director of Administration and General Infrastructure, the Head of the Human Resources Department, the Head of the Legal Service and Internal Audit. It recommended the adoption of a global fraud prevention and management policy.

The global fraud prevention and management policy was implemented through the **CERN Anti-Fraud Policy**, which was endorsed by the Enlarged Directorate in May 2012 and approved by the Director-General for entry into force on 1 January 2013.

The CERN Anti-Fraud Policy defines the Organization's policy in matters of fraud. CERN has a zero tolerance approach towards fraud, as it would compromise the accomplishment of its objectives and undermine its functioning, credibility and reputation. The policy also states CERN's commitment to the prevention, identification and investigation of fraud.

All CERN contributors have a key role to play in the prevention and detection of fraud and the responsibility to report suspicions of fraud.

Department Head Office
HR Department

Administrative circular n°14 (Rev. 3) – Protection of members of the personnel against the financial consequences of illness, accident and incapacity of work

Administrative Circular No. 14 (Rev. 3) entitled "Protection of members the personnel against the financial consequences of illness, accident and incapacity of work", approved by the Director-General following discussion at the Standing Concertation Committee meeting of 19 April 2012 and entering into force on 1 January 2013, is available on the intranet site of the Human Resources Department:

This circular is applicable to all members of the personnel.

It cancels and replaces Administrative Circular No. 14 (Rev. 2) entitled "Protection of members of the personnel against the financial consequences of illness, accident and disability" of July 2006.

The circular was revised in order to improve the procedure before the Joint Advisory Rehabilitation and Disability Board (JARDB) being referred and the management of long-term sick leave through a multidisciplinary

approach launched upstream. The aim of this approach is to favor staff / fellows concerned to return to work as soon as possible and in the best possible conditions.

Department Head Office
HR Department

Extension of the pre-retirement programmes

Following recommendation by the Standing Concertation Committee at its meeting on 4 December 2012 and approval by the Director-General, please note that:

- the Progressive Retirement Programme has been extended by one year, from 1 April 2013 until 31 March 2014; and
- the Scheme of Part-Time Work as a Pre-retirement Measure has also be extended by one year, from 1 January 2013 until 31 December 2013.

Human Resources Department
Tel. 73903

Administrative circular n°3 (Rev. 2) – Home leave, travel to home station and assimilated leave and travel

Administrative Circular No. 3 (Rev. 2) entitled "Home leave, travel to the home station and assimilated leave and travel", approved by the Director-General following discussion at the Standing Concertation Committee meeting of 11 October 2012 and entering into force on 1 January 2013, is available on the intranet site of the Human Resources Department.

This circular is applicable to employed members of the personnel.

It cancels and replaces Administrative Circular No. 3 (Rev. 1) entitled "Travel to the home station and home leave" of June 2002.

The circular was revised in order to take into account the new status of Associate Member State and the fact that henceforth, home stations may be situated on territory outside of Europe. It is proposed to introduce a new system of determination of the benefits (Travel expenses, travel time and distance indemnity) granted in the context of home leave and supplementary journeys to the home station. For this purpose, it is proposed to differentiate between ten large geographical zones. Furthermore, it is also proposed to limit the maximum amount of travel time granted in the context of home leave to four days.

Department Head Office
HR Department

To all members of personnel in receipt of remuneration from CERN

In 2013, net monthly remuneration will be paid into individual bank accounts on the following dates:

- Friday 25 January
- Monday 25 February
- Monday 25 March
- Thursday 25 April
- Friday 24 May
- Tuesday 25 June
- Thursday 25 July
- Monday 26 August
- Wednesday 25 September
- Friday 25 October
- Monday 25 November
- Thursday 19 December

Finance, Procurement
and Knowledge Transfer Department

Official holidays in 2013 and end-of-year closure 2013/2014 (Application of Articles R II 4.38 and R II 4.39 of the Staff Regulations)

Official holidays in 2013 (in addition to the special leave during the annual closure):

- Tuesday, 1st January (New Year)
- Friday, 29th March (Good Friday)
- Monday, 1st April (Easter Monday)
- Wednesday, 1st May
- Thursday, 9th May (Ascension day)
- Monday, 20th May (Whit Monday)
- Thursday, 5th September (Jeûne genevois)
- Tuesday, 24th December (Christmas Eve)
- Wednesday, 25th December (Christmas)
- Tuesday, 31st December (New Year's Eve)

Annual closure of the site of the Organization during the Christmas holidays and day of special leave granted by the Director-General:

The Laboratory will be closed from Saturday, 21st December 2013 to Sunday, 5th January 2014 inclusive (without deduction of annual leave). The first working day in the New Year will be Monday, 6th January 2014.

Human Resources Department
Tel. 73903



Seminars

THURSDAY 24 JANUARY

COLLIDER CROSS TALK

11:00 Search for direct stop pair production in single lepton events at $\sqrt{s} = 8$ TeV at ATLAS

CERN (4-2-011 - TH COMMON ROOM)

TH BSM FORUM

13:00 Diagnosing the 126 GeV Higgs-like State(s), BSM lunches

CERN (4-2-011 - TH COMMON ROOM)

A&T SEMINAR

14:15 nuSTORM, Neutrinos from STORed Muons

DR. ALAN BROSS (FERMILAB)

CERN (500-1-001 - MAIN AUDITORIUM)

FRIDAY 25 JANUARY

PARTICLE AND ASTRO-PARTICLE PHYSICS SEMINARS

14:00 News on axions from astro-physics

RAUL JIMENEZ (ICREA, U. BARCELONA & CERN-TH)

CERN (4-3-006 - TH CONFERENCE ROOM)

TUESDAY 29 JANUARY

SPECIAL DISCUSSION SESSION

11:00

EPFL

TH STRING THEORY SEMINAR

14:00 TBA

KOENRAAD SCHALM (LEYDEN UNIVERSITY)

CERN (4-3-006 - TH CONFERENCE ROOM)

FRIDAY 1 FEBRUARY

TH THEORETICAL SEMINAR

14:00 How hot is the quark-gluon plasma?

JPROF. HELMUT SATZ (BIELEFELD)

CERN (4-3-006 - TH CONFERENCE ROOM)



Take note

TPG: Unireso travel cards soon to be available for purchase at CERN

In the framework of a partnership between CERN and the TPG, all active and retired members of the CERN personnel will be able to purchase Unireso travel cards from the CERN Hostel - Building 39 (Meyrin site) from 1st February 2013. At the same time, the CERN Staff Association will stop selling cards to its members.

How to order a travel card

From 1st February onwards, travel cards can be ordered* directly from the reception of the CERN Hostel (Building 39) between the hours of 7.30 a.m. and 1.00 p.m. Mondays to Fridays:

- a digital photograph will be taken when you order your card,
- the card must be paid for, by credit card (EuroMaster, Visa or American Express) or in cash (Swiss francs only), when the order is placed.

Group Life Insurance

The CERN Administration would like to remind you that staff members and fellows have the possibility to take out a life insurance contract on favourable terms through a Group Life Insurance.

This insurance is provided by the company Helvetia and is available to you on a voluntary basis.

The premium, which varies depending on the age and gender of the person insured, is calculated on the basis of the amount of the death benefit chosen by the staff member/fellow and can be purchased in slices of 10'000 CHF.

The contract normally ends at the retirement age (65/67 years) or when the staff member/fellow leaves the Organization. The premium is deducted monthly from the Payroll.

Upon retirement, the staff member can opt to maintain his membership under certain conditions.

For further information, please contact Valentina Clavel (tel. 73904) and Maureen Mine (tel. 72736).

Finance, Procurement and Knowledge Transfer
Department

CERN School of Computing enriches its portfolio of events: 1st thematic CSC next spring

tCSC2013 is a new concept prototyped for the first time in 2013. It aims at complementing the existing portfolio of CSC events: the historical main summer school, organized since 1970, the inverted CSCs (iCSCs) organized since 2005, and the special schools, as organized in 2006 in Bombay.

Shorter, smaller, focused are the three distinguishing features of the thematic CSC (tCSC). But, though different from the main CSCs, the tCSCs maintain the same guiding principles:

1. Academic dimension on advanced topic
2. Theory and practice
3. Networking and socialization.

The 1st thematic CSC will take place in Split, Croatia, from the 3rd to the 7th of June. All applicants are welcome, including the former and future CSC participants in the main summer school.

The theme is **Mastering state of the art computing**, covering:

1. Data oriented design: Designing for data, data-intensive applications, vectorization
2. Memory programming: Memory effects in hardware, choosing data structures, non-uniform memory
3. Parallelism: Threads, tasks, problems and overheads, parallelization technologies and environments
4. Efficient computing: Architecture refresher (big and small cores), accurate and efficient floating point, compilers: their strengths and weaknesses, advanced performance monitoring and tuning

The application period is open and will close the 31st of January 2013.

François Flückiger, CSC Director



If you would like more information on a course, or for any other inquiry/suggestions, please contact Technical.Training@cern.ch

Valeria Perez Reale, Learning Specialist, Technical Programme Coordinator (Tel.: 62424) Eva Stern and Elise Romero, Technical Training Administration (Tel.: 74924)

Electronic Design Introduction to VHDL	Next Session 21-Feb-13 to 22-Feb-13	Duration 2 days	Language English
Mechanical design ANSYS - Introduction à ANSYS Mechanical APDL Applications de la cotation fonctionnelle et du langage ISO	Next Session 04-Feb-13 to 07-Feb-13 06-Feb-13 to 08-Feb-13	Duration 4 days 2 days 4 hours	Language English French
Office software ACCESS 2010 - niveau 2 : ECDL EXCEL 2010 - niveau 1 : ECDL EXCEL 2010 - Niveau 2: ECDL European Computer Driving Licence - Preparation for ACCESS module Expression Web - Niveau 1 (anciennement Sharepoint Designer ou Frontpage) Sharepoint Collaboration Workspace - niveau 1 Sharepoint Collaboration Workspace - niveau 2 Vidyo - Hands On Overview WORD 2010 - niveau 2: ECDL	Next Session 06-Feb-13 to 07-Feb-13 04-Feb-13 to 05-Feb-13 18-Feb-13 to 19-Feb-13 08-Feb-13 to 08-Feb-13 14-Feb-13 to 15-Feb-13 28-Jan-13 to 29-Jan-13 11-Feb-13 to 12-Feb-13 08-Feb-13 to 08-Feb-13 31-Jan-13 to 01-Feb-13	Duration 2 days 2 days 2 days 1 day 2 days 2 days 2 days 3 hours 2 days	Language French French French French English English French English French
Software and system technologies C++ Part 1 - Hands-On Introduction Developing secure software Drupal in a Day ITIL Foundations (version 3) ITIL Foundations (version 3) EXAMEN JavaScript for web development Javascript/jQuery/AJAX course Joint PVSS-JCOP Framework Python - Hands-on Introduction Python: Advanced Hands-On	Next Session 18-Feb-13 to 21-Feb-13 11-Apr-13 to 11-Apr-13 15-Feb-13 to 15-Feb-13 28-Jan-13 to 30-Jan-13 22-Feb-13 to 22-Feb-13 27-May-13 to 29-May-13 13-Mar-13 to 15-Mar-13 21-Jan-13 to 25-Jan-13 25-Mar-13 to 28-Mar-13 22-Apr-13 to 25-Apr-13	Duration 4 days 3.5 hours 8 hours 3 days 1 hour 3 days 3 days 4 days 3 hours 4 days 4 days	Language English English French English English English English English English English



Safety Training - places available in January 2013

There are places available in the forthcoming Safety courses. For updates and registrations, please refer to the Safety Training Catalogue.

Self-Rescue Mask training

29-JAN-13 to 29-JAN-13, 8h30 – 10h00,
in French
29-JAN-13 to 29-JAN-13, 10h30 – 12h00,
in French
31-JAN-13 to 31-JAN-13, 8h30 – 10h00,
in English
31-JAN-13 to 31-JAN-13, 10h30 – 12h00,
in English

Habilitation ATEX niveau 2

31-JAN-13 to 01-FEB-13, 9h00 – 17h30,
in French

Use of fire extinguisher – live exercises

25-JAN-13 to 25-JAN-13, 08h30 – 10h30,
in French
25-JAN-13 to 25-JAN-13, 10h30 – 12h30,
in French
Some sessions will be in English (dates to be defined)

Refresher course Self-Rescue Mask Training

28-JAN-13 to 28-JAN-13, 08h30 – 10h00,
in French
28-JAN-13 to 28-JAN-13, 10h30 – 12h00,
in English

Recyclage - Habilitation électrique personnel électricien basse tension (refresher course for electricians low voltage)

31-JAN-13 to 01-FEB-13 (1.5 days), 9h00 – 17h30, in French

Risks associated with operations in confined spaces

29-JAN-13 to 29-JAN-13, 09h – 17h30,
in French

Radiological Protection

28-JAN-13 to 28-JAN-13, 13h30 – 17h30,
in English