



Nos 30 & 31 – 25 July & 1 August 2012

Our dear boson – and so what?



CERN, 4 July 2012: a long-sought particle finally found.

Strictly speaking, we cannot even call it the "Higgs" boson yet. Only after careful checking of its properties will physicists be able to say if the new boson corresponds to the particle that theorists predicted in 1964. However, the experimental data we have so far already tells us, unambiguously, that this new particle is different from all the other elementary particles we know.

"Every particle is either a boson or a fermion," explains John Ellis, former CERN theorist and currently professor at King's College in London. "All known particles spin like small tops, with the known bosons that carry the fundamental interactions – such as the photon, the quantum of light that carries the electromagnetic force – spinning at twice the rate of the fermion particles that

make up matter particles such as electrons and quarks."

A practical application of the spin of nuclear particles is magnetic resonance imaging (MRI), a technique used for the early detection of a number of diseases. In order to produce high-resolution images of organs to facilitate medical diagnoses, MRI analyses the alignment of nuclear spins.

"Since the newly discovered particle decays into pairs of known bosons, it is certainly also a boson," says Ignatios Antoniadis, Head of CERN's Theory Unit. "However, we also see that it does not spin the same way as a photon. If it were a Higgs boson, it would not spin at all. This is what physicists call a

(Continued on page 2)



Something far, far bigger than ourselves

Now the dust has settled, we can take stock of the momentous events of 4 July. It is not every day that a new fundamental particle is discovered, certainly not one that could open new avenues to exploring the fundamental nature of our Universe. The last fundamental particles to be discovered at CERN, the W and Z bosons, were announced in 1983 and led to the Nobel Prize being awarded to Carlo Rubbia and Simon

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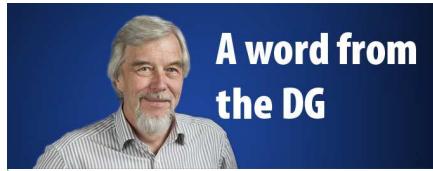
Published by:
The European Organization for Nuclear Research - CERN
1211 Geneva 23, Switzerland - Tel. + 41 22 767 35 86
Printed by: CERN Printshop
© 2010 CERN - ISSN: Printed version: 2077-950X
Electronic version: 2077-9518



Our dear boson – and so what?

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scalar boson, and it would be the first elementary scalar boson ever seen. However, we cannot yet exclude the possibility that the new particle spins at a larger rate than a photon."



A word from the DG

(Continued from page 1)

Something far, far bigger than ourselves

van der Meer the following year. This time, recognition has come in a more immediate form: though blanket global media coverage. The world shared our excitement.

People on all continents, even Antarctica, watched the seminar. The atmosphere in Melbourne, where I went immediately after the 4 July seminar, was vibrant, and at the Euro-science Open Forum (ESOF) in Dublin, which was my next port of call, it's fair to say that our news stole the show. The discovery was, of course, the subject of my talk for ESOF, but it also featured in other places, notably the keynote speech from European Commissioner Máire Geoghegan-Quinn, who hailed the spirit of competitive collaboration that reigns at CERN,

Either way, the newly discovered particle would be the first of a new class of particles. Will this change our everyday lives? The question has no immediate answer because history tells us that any practical application – such as the above example of MRI – might take years to develop or might never really

happen. However, whatever the future brings, physicists can already see that the new particle holds important information that will provide new insight into the workings of the Universe. Nature still holds many mysteries, and understanding this one may unlock the doors to others...

Antonella Del Rosso

and said that she'd been on the edge of her seat waiting for the announcement. "It writes the next chapter in the book," she said. For me, Commissioner Geoghegan-Quinn's talk was a highlight of ESOF. She argued for many things that are dear to CERN: collaboration, bringing people from diverse backgrounds and nations together, and the value of blue-sky research as an end in itself.

In the media, our news was reported with excitement, but also with suitable gravitas. A leading article in *The Economist* said that our field is to the universe what DNA is to life, and noted that for the LHC, the Higgs is merely the appetiser. In Spain, *El País* hailed the collaborative model that made the LHC possible, and expressed the hope

that our example might spread to other areas of scientific and indeed human endeavour. Closer to home, *Le Temps* said that the discovery is the most important in science for 50 years.

I would stop short of that. In my opinion, important though this discovery is, there are many others equally worthy of that accolade. Science has made many advances in the last half century, changing for the better the way we live our lives and think of our place in the Universe. For me, the most important thing about the way the world greeted our news on 4 July is that there can be no clearer sign that people care about science. As *Time* magazine put it: "We stopped for a moment to contemplate something far, far bigger than ourselves."

Rolf Heuer

LHC Report: a Roman potpourri

The TOTEM and ALFA run required the development of special optics to produce large beam sizes and smaller angular spread at the interaction points in ATLAS and CMS. These special optics produce shallower angled proton-proton collisions than normal and thus allow experiments to probe the very small angle scattering regime. (For more information visit the TOTEM and ALFA websites.) The qualification of the new set-up at 4 TeV went well, paving the way for a 13-hour physics run for both TOTEM and ALFA with their Roman pots in position.

The last couple of weeks of operation have been a mixed bag, with time dedicated to TOTEM and ALFA, a floating machine development period and luminosity calibration runs. These special running periods were interleaved with some standard proton running where we've struggled a little to recover previous highs. The LHC has now returned to more routine operation.

Highlights from the 48-hour machine development period included the injection of high intensity bunches using new SPS optics. A low number of bunches with 3×10^{11} protons per bunch was injected, ramped, squeezed and collided in attempts to provide exceptionally high pile-up to ATLAS and CMS – peaks of around 70 collisions per bunch crossing were achieved. There was also further development of the candidate optics for the high luminosity

LHC, which achieved a record squeeze factor at the interaction points.

The LHC's 2012 proton physics run has been extended until Monday 17 December, with the 4-week proton-ion run pushed into January/February 2013. This will give two sustained periods of proton-proton running split by machine development and a technical stop in September. The aim here is to maximize the delivered integrated luminosity before the start of the long shutdown (LS1), which will now start mid-February. The length of LS1 remains the same with beam foreseen to be back in the LHC towards the end of 2014.

Mike Lamont for the LHC Team

A proposal: LEIR to serve biomedicine

LEIR is a small synchrotron with a circumference of about 78 m. It currently receives particles from Linac 3 and prepares beams for the SPS and the LHC. "In order for LEIR to be able to provide ion beams with appropriate energies for studies of interest for biomedical applications, a new ejection system with new beam lines needs to be designed," explains Christian Carli, from the Beams Department. "In addition, Linac 3 could be upgraded to include a second ion source and a radio frequency quadrupole (RFQ) optimized for ions of interest for biomedical studies."

The biomedical-related activities could take place in "time-sharing mode", that is, also during LHC ion runs. The LEIR facility could provide ion species from protons up to at least neon ions. Bio-targets (i.e. human cells, both malignant and normal) could then be tested in the beamlines, as well as innovative dosimetry systems, radiation detectors, and proton radiography and tomography devices.

LEIR is the CERN facility that produces high-density ion beams for the LHC and for the SPS fixed target experiments. Since its operational schedule is not fully booked, LEIR could, in principle, be exploited even further. A brainstorming meeting recently took place at CERN to evaluate the possibility of modifying LEIR to serve the biomedical community. Discussions are in progress.

The prerequisites are there for LEIR to attract the attention of the vast community of scientists – medical doctors, physicists, biologists, etc. – involved in hadron therapy, radiation protection and other biomedical applications. "Over 200 scientists from 26 countries, mostly from the European Union but also from Australia, Canada, Colombia, India, Mexico, Russia and USA, attended the brainstorming meeting," says Manjit Dosanjh, in charge of life sciences at CERN and organiser of the event. "The 17 presentations raised many issues that were addressed by the participants. Several of them pointed out that CERN could be an ideal location for such a new facility because of the Laboratory's expertise in beam production, detector development, advanced computing and analysis. The absence of clinical activities may also be an advantage since all efforts would be concentrated on

research. Of course, our established links with other biomedical centres in Europe through networks like ENLIGHT are also an advantage."

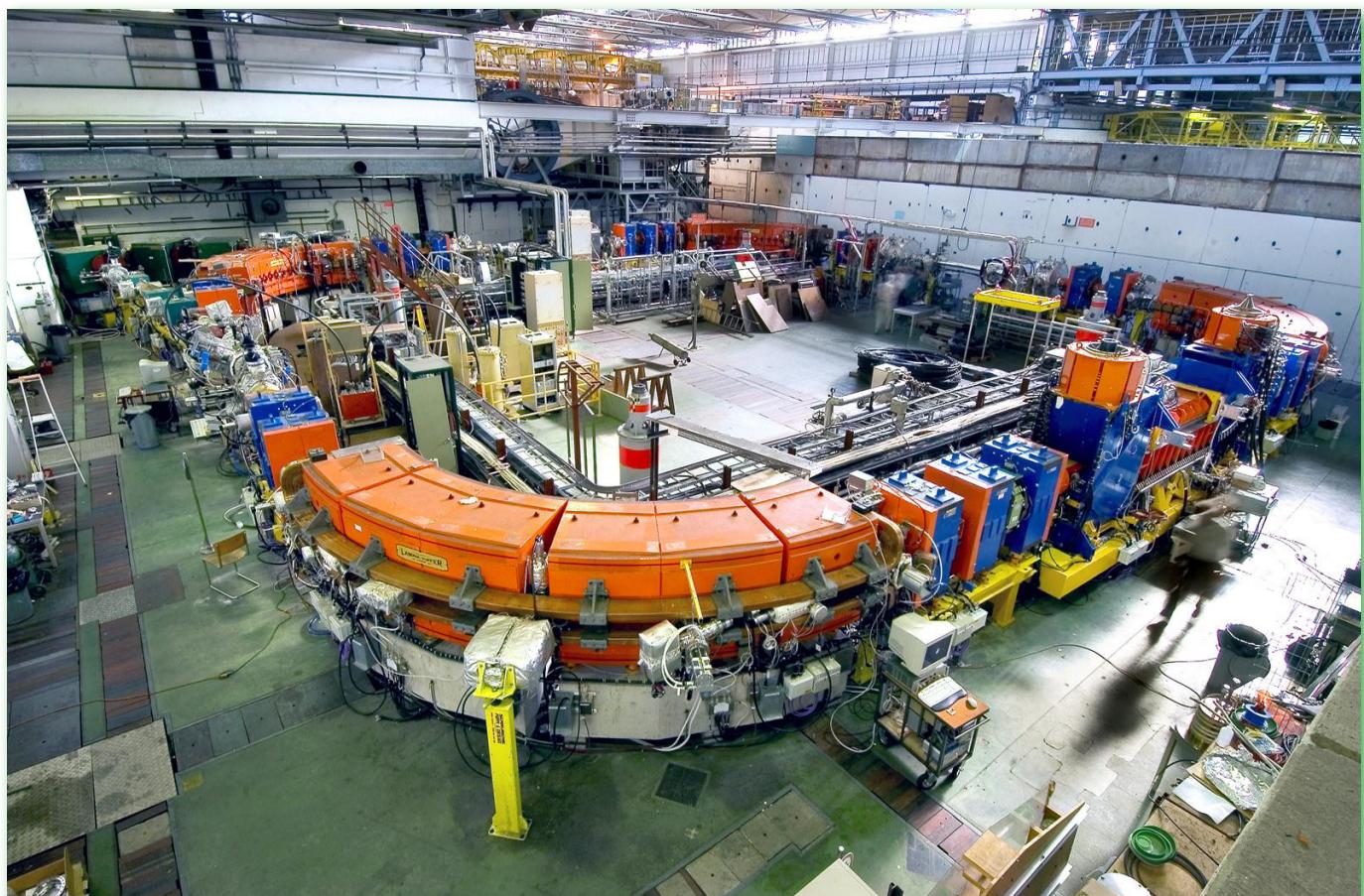
The new facility could also help to bring together members of the biomedical community to set up a training centre for researchers in this field, which requires knowledge and expertise in a large variety of disciplines.

Funds to build the new facility and the related infrastructure could come through the EU Framework Programme 8 (Horizon 2020). In this respect, the fact that the basic infrastructure already exists would ensure the necessary cost-effectiveness.

Further details on the programme of the meeting and the material from the presentations can be found at:

[https://indico.cern.ch/
conferenceTimeTable.
py?confId=193910#20120625](https://indico.cern.ch/conferenceTimeTable.py?confId=193910#20120625)

Antonella Del Rosso



The Low Energy Ion Ring (LEIR).

Retirement postponed!

Lyn Evans, former LHC project leader, has just been appointed director of the new Linear Collider organisation which brings

together the two existing linear collider programmes under one roof. "We will initially continue to work in parallel on both CLIC and the ILC," says Evans. The two proposed accelerators have a number of elements in common, from the damping rings to the final focus systems. Both have very similar detector designs, with the exception of the data acquisition systems as the machines have very different time structures. "The technologies for the two accelerators are at very different levels of maturity," summarises Evans.

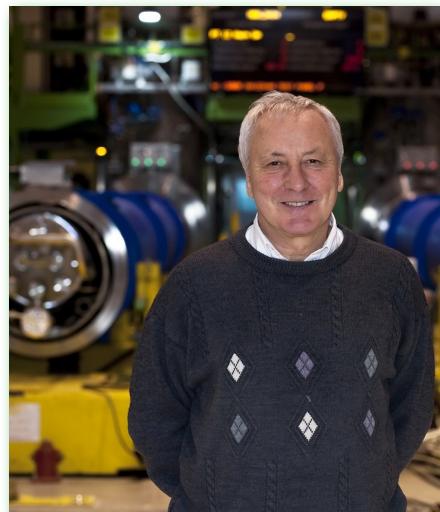
When the time comes to make the final decision, Evans feels strongly that it should be based on science, rather than politics or personal preference. "That's why the Higgs result is so important for the future linear collider. It's essential that enough data is collected before the first long shut-down. That way we can really nail down the sci-

ence which will dictate what kind of collider is needed. The recent decision to extend the LHC 2012 run is in order to accumulate as much data as possible."

Evans' goal during his three-year term is two-fold: first to reach a decision about which accelerator to build and where, and secondly to get the plan and its funding approved. "It's going to be a tough job," he says, "but then so was the LHC!"

"With the LHC it made all the difference that the physics community was really united in wanting a high energy hadron collider," adds Evans. "For a future linear collider we are much more likely to get an accelerator approved if we can show a true consensus on what kind of machine is needed."

Given its size, the project will need a global approach. And the International Committee



Lyn Evans at SM-18.

for Future Accelerators which appointed Evans is already working on three continents: "My nomination came about after consultation with the American, Asian and European physics communities. I will work to keep the Linear Collider organisation a world-wide effort," concludes Evans.

Joannah Caborn Wengler

Socially responsible investments

The two charities are located near Beijing. Beijing's "China Children Charity and Foundation" is an orphanage that cares for up to 80 babies who need surgery to correct birth defects. The other, "Hope Healing Home" (<http://www.hopefoster-home.com/>), is an organization that deals with 300 babies and cares for sick and physically disabled babies who have been abandoned. All these babies are awaiting treatment and a medical solution.

The CERN Pension Fund has over 6700 members. To ensure the greatest efficiency and profitability, the Fund's portfolio is diversified and constantly monitored for performance. "We entrust our funds to managers selected according to very strict rules," explains Théodore Economou, Pension Fund Chief Executive Officer.

"In addition to efficient capital preservation skills, we impose some ethical criteria – such as no involvement in weapons, alcohol,

In addition to well-established working principles based on conservative and capital preservation oriented investments that ensure it a sustainable future, the CERN Pension Fund recently introduced a new criterion for selecting the numerous opportunities that the market offers: philanthropy. Its first initiative, which also involves the Staff Association's Long-Term Collection, will help support two orphanages in China.

tobacco and gaming. More recently, we were also able to negotiate a contribution from the managers' pocket to CERN philanthropic initiatives," says Greg Haenni, Chief Investment Officer.

In practical terms, the CERN Pension Fund, as standard practice, negotiates to never pay more than the lowest fee offered to any other similar investor. The Fund then also asks managers to pledge to financially support philanthropic programmes. "In CERN's case, this project was discussed with Marcel Aymon, as well as Claude Dehayav. Contributions will go directly to the long-term collections of the Staff Association," says Greg Haenni.

In the well-established spirit of monitoring the Fund's activities, Greg Haenni went

to China last year and visited the "Hope Healing Home" orphanage: "I was absolutely amazed by the amount of care people working in the orphanage were offering to sick and abandoned children. I am very happy that Dorothée Duret, former vice-president of the Governing Board of the CERN Pension Fund welcomed the proposal to have socially responsible investments. The members of the Investment Committee really appreciated the idea and now the whole thing is taking off!"

The two charities are in the process of being added to the list of projects supported by the long-term collections of the Staff Association (<http://staffassoc.web.cern.ch/staffassoc/CLT/IndexPrj.htm>).

You are welcome to contribute directly with donations. The CERN Pension Fund suppliers are doing so already.

Please read also the spring report of the Pension Fund (see on page 15).

Antonella Del Rosso

Of Mind and (sub-atomic) Matter

"CERN's collaborative, multicultural research environment is an extraordinary source of inspiration for the scientific community," says Mary Baker, President of the European Brain

Council (EBC). "It was the reason why we chose to hold our first Management meeting for 'Age of the Brain'. It was a wonderful opportunity for us and a great privilege to be invited."

Established in 2002, the European Brain Council seeks to improve the management of brain diseases by promoting research in Europe, and also to improve the quality of life of patients and their families. To do this, it brings together the entire brain community, including European organisations in neurology, neurosurgery, psychiatry and neuroscience, as well as patient organisations and industry.

"Along with promoting research, one of our primary aims is to encourage dialogue

There are medics in the Main Building: neuroscientists, neurosurgeons and psychiatrists to name but a few. In short, more doctors than most of us have ever seen outside of a university or a hospital. Not a typical scene for a laboratory focusing on physics rather than physiology, but one that became common during the two-day European Brain Council Meeting held at CERN this June.

between scientists and society – it is in this area where we may be able to collaborate with CERN," explains Mary. "Knowledge being acquired can feed into the health systems, whether through hadrontherapy or medical accelerators. How can we help get this information to clinicians, to let them know what is coming down the line and what they should be fighting for? And later on, how do we help prepare society for the great role science is playing in our civilisation? And with the economic constraints the world is facing, how do we defend scientific studies? When you've got these sorts of situations to face, it is going to be the brain that drives us out. And there's a lot of brain here at CERN."



Along with their management meeting, EBC members enjoyed a full day's programme centred on CERN and its activities. On the itinerary: an introductory lecture to CERN, a visit of the CMS control room and experiment cavern, a descent into the LHC tunnel, and a light lunch with Rolf Heuer, Joe Incandela and others. "We had a wonderful time here and look forward to collaborating further with the Organization," says Mary. "For instance, 2014 will be the Year of the Brain here in Europe, and we'll be highlighting various 'ambassadors' to represent different presentations of the brain – from Olympians to authors and composers. Hopefully CERN can contribute physicists for this event."

Katarina Anthony

The Higgs boson: treated like a rock star

"#CMS: "we have observed a new boson with a mass of 125.3 ± 0.6 GeV at 4.9 sigma significance." Thunderous applause. #Higgs #ICHEP2012" This was the "tweet" sent from

the CERN Twitter account that flew around the world at, some would say, almost the speed of light. Sent out as part of the live Twitter feed from the Main Auditorium, it reached news desks before the official press release. It was retweeted more than 4,000 times, reaching a potential audience of more than 5 million Twitter users. The social media platform reflected the frenzy for news on the Higgs boson – in its live monitoring of topics "trending" on Twitter during the seminar, 8 out of 10 were related to CERN.



Poster in the window of the CERN kiosk the day after the Higgs update event. Photo by Kate Kahle.

On 4 July, excited physicists and journalists crowded the CERN site, while around the world thousands tuned in to the webcast, all wanting news of the elusive Higgs boson. News of the Higgs-like boson spread instantaneously via live blogging, news feeds, Twitter, Facebook and other channels. The global media coverage opened doors for CERN to reach new audiences, some of which were quite unexpected...

More and more people began to turn their attention to CERN and started to follow what was being said. As the *Le Matin* newspaper noted, the Higgs boson was being treated like a rock star (see photo). Unexpected celebrities began to retweet CERN tweets. The American rapper MC Hammer told his 2 million followers that the CERN press conference recording was now online. Will-i-am from American band Black Eyed Peas told his audience of 4 million people: "@iamwill Happy 4th of July to all Americans...& happy "god particle" day to science enthusiasts...congrats to all the scientists at CERN...#willpower".

But Twitter wasn't the only social media platform on which CERN information spread: on the CERN TV YouTube channel each Higgs-related video had more than 14,000 views in one day, with John Ellis's "What is the Higgs Boson" top of the list with more than 116,000 views on 4 July alone. The French version had more than 30,000 views in one day, a record for a French-language CERN video. John's reaction: "Move over Lady Gaga"!

Higgs humour began to take hold, from cartoons such as the Angry Birds' Piggs boson to jokes including questions for the Higgs boson itself. Possibly the most surprising audience reached by the 4 July announcement was the 7 million readers of the UK's most popular newspaper *The Sun*, whose page 3 glamour model reflected on the significance of the Higgs boson.

What was clear from 4 July and the days that followed was the influence of social media on the way the news spread. Given this, the CERN communications team is now focusing more on social media as part of overall communications – more to come in the coming months.

Kate Kahle,
on behalf of the CERN Communication Group



Did you know?

• • • • •

Media statistics from 4 July

At CERN on the day: 88 journalists representing 55 media; 11 worldwide news agencies including Reuters, AP and AFP; 21 print press representatives; 4 photographers and 20 TV companies.

Video footage was used by 1,034 TV stations and 5,016 news programmes, compared to 550 TV stations and 3,500 news programmes in 2008, for the inauguration of the LHC.

The webcast of the Higgs seminar had almost 500,000 single IP connections – with a record 60,500 IPs connected at once. CERN also provided 150 scientific institutes – with an estimated audience of 10,000 people – with a special HD connection to the webcast, and a video conference connection to the 700 physicists present in Melbourne for the ICHEP conference.

The Higgs seminar, by those who were there

- If the Higgs boson was treated like a rock star by the international media, take a moment to imagine the ambiance that reigned at CERN - home to the beast... When Rolf Heuer, CERN Director-General, appeared in the first-floor corridor of the Main Building, at 7.15 a.m. on Wednesday 4 July, he was met with applause from a horde of Cernois. In that moment, there was no doubt: the day would be exceptional. And it was. For us at CERN more than any other. The proof? Hear it straight from the horse's mouth...

"One might have thought that being far from the Main Auditorium last Wednesday the atmosphere would be less electrified but actually this was not true: when the seminar started, sacred silence was kept, interrupted only by warm and loud applauses, big smiles, cheerful whistling, hand shaking... one could say there was really 'something' in the air. A mixture of scientific enthusiasm, joy, curiosity and big amounts of rocking excitement..."

From the back seats of the filtration plant where I rushed after I saw the queue outside the Auditorium, I was able watch almost everyone's reaction. After 11 years at CERN and having lived through big events in its history, I felt from the beginning there was something very particular about this seminar and we might be about to witness a big event. There were no complaints about the – sometimes unbearable – heat, people were standing stoically and listening, trying to make space for others who came in late, no jostle, no anger, no irritation..."

- an anonymous Cernois

"I was lucky enough to attend the Higgs Seminar last Wednesday. My friends and I camped out from around 2 a.m., and were quite excited to be able to get in around 7.40 a.m.!"

- Kevin McDermott (PH-AIP-PAP), who blogged about his experience in the queue here

"You bet I'm proud to be at CERN! :-)

The recent Higgs announcement has once again demonstrated the huge interest from the general public, but also the great challenge we face to communicate our work in an understandable manner. This is the kind of event that gives you the feeling your daily work is really part of the common goal we all share, even if it is only remotely linked to physics."

- François Briard (GS-AIS-HR)

"What a feeling of pride to be part of this human and scientific adventure! At the CERN Medical Service we are proud to be making our own modest contribution to helping the staff meet their objectives and stay in the best of health."

- Dr Eric Reymond (GS-ME)

"Wow, I felt again the full privilege of being part of it. This goes even much beyond the sensational observation of the boson: CERN is the living and lasting example of how mankind's global efforts can cope with the most tremendous challenges by sharing ideas and fostering enthusiasm. Thank you."

- Guido Sterbini (BE-ABP-LIS)

"My contribution to actually discovering the Higgs was precisely zero. Indeed, my understanding of the physics we are describing is sketchy at best. However, I do work here, so that's got to count for something. Working in Knowledge Transfer means that I get to see the by-products of the huge efforts that go into making the experiments so successful disseminated to the wider world. That is where I see my sense of belonging to the process and the community of thousands, all striving towards the same goals."

- Alexander Brown (FP-KT-IP)

New ALPHA-2 magnet

"This was the first of three identical solenoids that will be installed between now and September, as the rest of the ALPHA-2 device is installed and commissioned," explains ALPHA spokesperson Jeffrey Hangst. "These magnets are designed to allow us to transfer particles – antiprotons, electrons and positrons – between various parts of the new ALPHA-2 device by controlling the transverse size of the particle bunch that is being transferred."

Sumera Yamin and Khalid Mansoor, two Pakistani scientists from the National Centre for Physics in Islamabad, came to CERN in February specifically to design and manufacture these magnets (see the issue No. 10-11/2012 of the CERN Bulletin). "We had the chance to work on actual equipment – using software, manufacturing and winding the coil, and assembling and testing the solenoids in workshops and labs," says Sumera. "It was challenging and very interesting to go through the whole process," adds Khalid.

A second type of solenoid will be manufactured later this summer, completing the ALPHA-2 magnet infrastructure.

Anaïs Schaeffer

On 21 June, members of the ALPHA collaboration celebrated the handover of the first solenoid designed for the ALPHA-2 experiment (<http://alpha-new.web.cern.ch/>). The magnet has since been successfully installed and is working well.



Khalid Mansoor, Sumera Yamin and Jeffrey Hangst in front of the new ALPHA-2 solenoid.

Les Horribles Cernettes - "Goodbye CERN" concert

The Cernettes will be giving their farewell concert at the CERN Hadronic Festival, this Saturday 21 July as of 7 p.m., in Restaurant 3 (CERN Prévessin site). This final performance draws to a close the 20-year career of CERN's legendary band.

Please see the video of the band at:

<http://cdsweb.cern.ch/record/1462806>

No app for that? Make it yourself!

The CERN Summer Student Webfest is a weekend of online web-based creativity modelled on the gatherings

(sometimes called hackfests or hackathons) that energize many open source communities. You can work with like-minded students and CERN staff to design and build demos of the web apps you would like to see online. Prizes will be awarded to the best apps, with a Grand Prize winner receiving a trip to the Mozilla Festival in London!

Participants in the CERN Summer Student Webfest will work in teams and design neat web apps that encourage the public to learn more about science and, in particular, CERN, the LHC and particle physics. The apps can range from games to volunteer computing projects and redesigning existing web information so that it can easily be browsed on the latest phones and tablets.

Although aimed at the summer students, technical students, openlab students and other young summer visitors, the event is open to people of all ages at CERN with a passion for web-based science outreach and education and who have a weekend to spare. You do not have to be a software expert to contribute: many types of skill sets are needed in order to develop an app. Indeed, successful teams will need people to work on various different areas, from writing and design to physics and engineering.

So, come along for the weekend and create, innovate and educate about science on the web!

Are you passionate about science? Do you like communicating that passion to the general public? Then come along to the very first CERN Summer Student Webfest kicking off on Friday 3 August! The Webfest is a grassroots initiative by the summer students, seeking to spark new ideas that could innovate the future of web-based education about CERN, the LHC and particle physics.

Kick-off!

Project ideas will be presented at a kick-off evening on Friday 3 August, from 5:30 p.m. to 8 p.m. in the Main Auditorium. Teams will self-assemble around the most exciting pitches. Anyone who is participating can pitch a project; pitches will be presented in a short set time to give every participant the chance to present his or her ideas. However, participants are encouraged to submit their project ideas to the Webcast website for the best chance to form a well-defined team. The kick-off event will also introduce a range of tools for modifying the web, creating online education and contributing to online science.

Will there be prizes?

A Grand Prize will be awarded for the best app: a free trip to the Mozilla Festival in London from 9 to 11 November, courtesy of the Mozilla Foundation. Other things will be trickled out in due time on the website.

Where will we work on our ideas?

Teams can work on their Webfest app in CERN's Restaurant No. 1. As the location is an open-space environment, teams will be able to work together while allowing for plenty of interaction between the organizers and various mentors. However, the event is free form, so teams can work anywhere.

How will the event end?

The event will wrap up on Sunday 5 August at 4 p.m. with a judging panel reviewing the apps and awarding the Grand Prize. John Ellis, the doyen of particle theorists and a keen enthusiast of good science outreach, will be one of the judges.

Many thanks to our sponsors...

The event is sponsored by the Mozilla Foundation and the Shuttleworth Foundation, and co-organized by the Citizen Cyberscience Centre and the Peer-2-Peer University.

For more information and to post your project ideas, please visit the website at:

<http://citencyberscience.net/wiki>

Connect to the event on: Facebook - Google+ - Twitter.

Katarina Anthony

Sometimes age is just a detail

In 2011, Google launched its first global science competition for teenagers aged 13 to 18: the Google Science Fair.

Several thousand young students from 91 countries took part in the contest by submitting a personal and original scientific work. Shree Bose won first prize in the 17-18 age category and the Google Science Fair "Grand prize". Her work? She discovered a way to improve ovarian cancer treatment – no less – by overcoming patients' resistance to chemotherapy drugs.

Along with two other winners of the competition, Shree went to the White House to meet US President Obama (<http://www.whitehouse.gov/blog/2011/10/07/google-science-fair-winners-visit-white-house>), and presented her work at TED Women in Los Angeles (http://www.ted.com/talks/award_winning_teen_age_science_in_action.html). She was also named one of Glamour Magazine's "Amazing Young Women of 2011".

On top of that, Shree won a \$50,000 scholarship, a trip to the Galápagos Islands with a

Shree Bose, the young woman who won the 2011 Google Science Fair competition, visited CERN at the end of June. She had the chance to be here for the Higgs update seminar and, as she told the Bulletin, was "completely blown away".

National Geographic explorer and an internship at CERN, which she did from 26 June to 5 July 2012.

The Bulletin met her on 4 July, just after the Higgs update seminar and the press conference, which she had the chance to attend. Her enthusiasm was overwhelming: "This is ridiculous. It's like the craziest planning!" she said. "I came during a technical stop, last week, so I got to go down to see the accelerator and all the detectors. And this week, I saw the control rooms. And then, I was here today for this huge announcement! I was thinking: 'Oh my Goodness, this is history being made and I'm sitting right here, around people who have worked on this thing their entire lives.' It was really inspiring."

Some other unexpected surprises enriched Shree's visit to CERN. "I met Peter Higgs! He came to the office - it was the only 5 minutes break I'd had all day - and I was just sitting



Shree Bose, in the LHC tunnel.

there..." she said. "This trip has been full of so many coincidences. I got to meet so many incredible people, from the physicists to the people running the machines, the shifters and the communication people. It has been so crazy!"

But what was the highlight of the visit for Shree? "I think my favourite part has actually been seeing all these minds working together: a group of people really determined, passionate. They can do the impossible. I'm completely blown away."

In August, Shree will go to Harvard University to study cellular and molecular biology: "Right now, I'm in biology. But by being here, my interest has just been driven in so many directions." We might see her at CERN again one day...

Follow Shree Bose on Twitter and <http://shreebose.com/>.

Tune in to <http://www.google.com/intl/en/events/sciencefair/> at 4:00 a.m. (CET) on July 24 to watch a livestream of the finalist celebration gala and awards ceremony of the 2012 Google Science Fair competition.



Shree "on shift" at the CCC.

Anaïs Schaeffer

CERN welcomes Intel Science Fair winners

The CERN award was set up back in 2009 as an opportunity to bring some of the best and brightest young minds to the Laboratory. The award winners are selected from among 1,500 talented students participating in ISEF (<http://www.societyforscience.org/isef>) – the world's largest pre-university science competition, in which students compete for more than €3 million in awards.

"CERN gave an award – which was obviously this trip – to students studying physics, maths, electrical engineering and computer science," says Benjamin Craig Bartlett, 17, from South Carolina, USA, whose project looked at infrared detectors. "They got a copy of our project abstracts and test results, and after a special test and an interview they chose twelve of us to come to CERN."

This June, CERN welcomed twelve gifted young scientists aged 15-18 for a week-long visit of the Laboratory. These talented students were the winners of a special award co-funded by CERN and Intel, given yearly at the Intel International Science and Engineering Fair (ISEF).

Following an itinerary organised by CERN's Wolfgang von Rüden, the students spent the week touring the CERN site and the surrounding Geneva area, visiting glaciers and lecture halls, control centres and chateaux. They also had the chance for some one-on-one time with CERN scientists. "The experience we had with our own scientists was – at least personally – very enlightening," said Valerie S. Ding, 15, from Oregon, USA, whose project looked at white-light LEDs. "We were able to spend time with the scientists in their regular environment, experiencing a couple of hours of their day-to-day work."

Many of the students were paired with experts in the very fields they had chosen

for their projects. "I spent the day with one of the heads of detector technology here, and he took me to one of the clean labs," said Saumil Bandyopadhyay, 17, from Virginia, USA. "I got to see some of the detectors they are building right now, using the newest photodetector technology, which was great because that was what my project was on."

When asked to summarise their experience at CERN, their response was overwhelmingly positive: "Great." – "Amazing." – "Awesome." – "Absolutely wonderful." Here's hoping that every student visiting CERN leaves with the same impression!

Read more about the CERN award and its previous winners in the Bulletin article, issue No. 28-29/2011: "A glimpse into the future for 12 young scientists".

Katarina Anthony



The CERN award winners at the Intel ISEF 2012 Special Awards Ceremony. © Society for Science & the Public (SSP).

Make-A-Wish recipient visits CERN

"Switzerland has been amazing," Katie said. "I've met a ton of fantastic people and seen all kinds of fascinating things."

A serious student who plans to study engineering and physics this autumn at the University of Washington, Katie was particularly fascinated by the magnets in SM-18.

"We just finished studying electromagnetism at school," Katie said. "It was great to see the magnets."

Diagnosed with hypertrophic cardiomyopathy when she was 15 years old, Katie isn't letting the heart condition stop her from working towards a bright future.

"I want to know how things work," Katie said. "Maybe I'll end up working at CERN."

Ashley WennersHeron

Katie Kemp, an 18-year-old from Seattle, wants to know how the Universe operates. On 22 June, she started working on the answer with help from CERN and Make-A-Wish Switzerland, a foundation that grants wishes to children and young adults in Switzerland living with life-threatening conditions.



"Bike to work", a successful motto

The purpose of the campaign was to encourage the employees of Swiss companies to bike to work in June. Grouped into teams of four, no fewer than 50,000 cyclists accepted the challenge and clocked up a total of 6.8 million kilometres, 171 times the circumference of the Earth, thereby reducing CO₂

In June 2012, Switzerland launched a "Bike to work" campaign in which several tens of thousands took part. CERN personnel also took up the challenge.

emissions by 1088 tonnes (calculation basis: 160g CO₂/km, for a small-cylinder car).

At CERN, 316 people took part in this initiative, which was supported by the Medical

Service. With their car left in the garage and their feet on the pedals, the CERN participants alone clocked up over 58,000 kilometres. The result was less stress - fortunately no accidents - less pollution, and a strong request for more cycle lanes!

To build on this promising initial enthusiasm, continue to use your bike as part of the "Move, eat better" campaign or the 2012 challenge.

Caroline Duc



"Bike to work" participants, 21 June 2012.

LHC 2012 proton run extended by seven weeks

On 3 July, a meeting was held between the CERN Management and representatives

of the LHC and the experiments to discuss the merits of increasing the data target for this year in the light of the announcement to be made the following day. The conclusion was that an additional seven weeks of running would allow the luminosity goal for the year to be increased from 15 inverse femtobarns to 20, giving the experiments a

An important piece of news that almost got lost in the excitement of the Higgs update seminar on 4 July is that the 2012 LHC proton run is to be extended.

good supply of data to work on during the LHC's first long shut-down (LS1), and allowing them to make progress in determining the properties of the new particle whose discovery was announced last week.

The current LHC schedule foresees proton running reaching a conclusion on 16

October, with a proton-ion run scheduled for November. In the preliminary new schedule, proton running is planned to continue until 16 December, with the proton-ion run starting after the Christmas stop on 18 January and continuing until 10 February. With a final Higgs update for 2012 scheduled to be given to Council during the week of 10 December, an early Christmas present in the form of new insights into the discovery announced last week could be on the cards.

James Gillies



Computer Security
Sécurité informatique

Music, videos and the risk for CERN

Thus, if you want to listen to music or watch films at CERN, make sure that you own the proper rights to do so (and that you have the agreement of your supervisor to do this during working hours). Note that these rights are personal: you usually do not have the right to share music or videos with third parties without violating copyrights. Therefore, making copyrighted music and videos public, or sharing music and videos as well as other copyrighted material, is forbidden at CERN and outside CERN. It violates the CERN Computing Rules (<https://security.web.cern.ch/security/rules/en/index.shtml>) and it contradicts CERN's Code of Conduct (<https://hr-info.web.cern.ch/hr-info/codeofconduct.asp>), which expects each of us to behave ethically and honestly, and to credit others for their contribution.

Do you like listening to music while you work? What about watching videos during your leisure time? Sure this is fun. Having your colleagues participate in this is even more fun. However, this fun is usually not free. There are artists and the music and film companies who earn their living from music and videos.

Violating copyright is not a trivial offense. Sharing music or videos via the CERN network or from CERN computers will reflect back on the Organization and shed a bad light on all of us. Therefore, help keep CERN's reputation and integrity protected. Respect copyright! Users violating these rules may face serious consequences, including the involvement of their supervisor.

If you have any questions, suggestions or comments, please contact the Computer Security Team at Computer.Security@cern.ch or visit us:

<https://security.web.cern.ch/security/home/en/index.shtml>

Please note that while the ban on using P2P technology at CERN and the restrictions on using Skype were recently lifted, violating copyright is still forbidden at CERN. Any violation will be followed up, including with the supervisor of the person violating the rules.

Computer Security Team



In this series, the Bulletin aims to explain the role of the Ombuds at CERN by presenting practical examples of misunderstandings that could have been resolved by the Ombuds if he had been contacted earlier. Please note that, in all the situations we present, the names are fictitious and used only to improve clarity.

Ombuds' corner: Relationship to authority

Among the cases brought to the Ombuds, many of them have to do with difficulties between supervisees and supervisors. In fact, they form the majority of the cases. For both parties, the source of the conflict boils down to the relationship that people entertain with what can be called "the authority". The relationship with the authority is somewhat different within the various Sectors of CERN, as are the relationships between personnel and supervisors.

Generally one considers that natural authority can either come from a respected technical knowledge, or from charisma along with a good understanding of human relationships. Of course together these qualities generate the best leaders. Without these qualities, any authority based only on a hierarchical position is bound to generate interpersonal conflicts or even the polarization of an entire unit against its supervisor. This is because the ignorance of a supervisor, either technical or towards human relations, creates an improper balance between both sides. On the other hand, a rigid respect of the authority by personnel will result in them interpreting advice and personal opinions as strict orders, which will be of course be contested one way or another. Both situations can generate conflicts as seen in the following examples:

- Jack* has recently been nominated supervisor of a unit which had had several interpersonal difficulties. As he did not want to be involved in them, wishing to impose peace at last in his group, Jack started to be very directive, even authoritarian. He hoped everyone would unify under his leadership, and do what they were told to do instead of struggling against each other. So, he started to talk in terms such as "I am your boss and you do what I tell you to do". Of course, this had a disastrous effect on people who knew their profession, were used to work somewhat independently, and were following the "Research Laboratory" spirit. Everyone in the group thought it was a nonsense, especially due to the fact that Jack, being the last to join the unit, did not appear to have complete technical competence. The small reserve of initial charisma he had melted like snow in the sun, and Jack faced a difficult situation where all his supervisees were against him for both right and wrong reasons. In the end, everyone queued in front of the door of the Ombuds - maybe a bit late in the game.

- Dona* is used to sharing her opinion with people concerning lots of managerial matters. In fact, she expects them to react and give her their input. Unfortunately, her collaborators are used to follow directives, without realizing that she expects a discussion, as she favors their initiative and accountability. Such a misunderstanding

has then created a gap between her and her supervisees: she does not know how to get their feedback, and they secretly contest what they take as orders, while still following the strict position of authority imparted from her function. The group has become unmanageable.

Conclusion

Relationships between supervisees and supervisors are much improved by mutual respect. If a proper discussion takes place at the beginning, people will then understand that decisions have to be taken by the person in position to take them. The good criterion for taking correct and ethical decisions is that they can be later explained in a transparent way. While supervisors should understand all the qualities they are accountable for as leaders, collaborators should participate in a constructive way to the management of their group. Early discussions with the Ombuds may alleviate misunderstandings leading to difficulties or even disputes.

Contact the Ombuds early!

<http://cern.ch/ombuds>

Vincent Vuillemin

* Names and story are purely fictitious.



Since my last report in April, I am pleased to report the following progress.

On the recommendation of the Finance Committee, the CERN Council approved the updated Financial Regulations of the Fund at its June session, with immediate effect. The approval of the Financial Regulations completes a key part of the regulatory framework of the Fund's operations.

Also in June, the Council approved the Financial Statements of the CERN Pension Fund for 2011. The Financial Statements had been certified by the Italian Court of Audit (CERN's External Auditor), which gave its report to Council. 2011 was the first year during which the audit-related provisions of the updated Fund Rules were fully implemented.

On the investments side, the Fund continues the implementation of its capital preservation approach, which is particularly appropriate in the current conditions,

In this new column, the Chairman of the Pension Fund Governing Board (PFGB) will regularly present the latest main decisions, initiatives and accomplishments of the Governing Board to the members and beneficiaries of the Fund.

where capital markets remain extremely volatile, and risk-free assets, such as Swiss government bonds, offer historically low yields. Implementation of the capital preservation approach implies moving to a portfolio with lower risk and greater efficiency that is compatible with the return objectives fixed by the Council. This transition is presently 30% complete. The target is to have 80% of the portfolio aligned with the capital preservation mandate by the end of 2013. The initial results are very encouraging: as of 31 May 2012, the Fund had returned +2.0% year-to-date, whereas for comparison, the Eurostoxx50 index return for the same period was -8.5%. A presentation on the status of the Fund's assets and implementation of the capital preservation strategy was given by the CEO of the Fund both at the Finance Committee and the Council in June.

In 2011, the Fund initiated a project to enhance internal controls and develop an

Internal Control System (ICS), which is integrated in all activities of the Fund. The first implementation of the ICS was audited this past spring by an auditor specialized in pension fund matters. The audit verified the completion of the documentation of the main risks and associated controls, the execution of controls as a part of daily activities, and a clear distribution of responsibilities.

I conclude by reporting the following recent appointments to the PFGB and its Investment Committee. The CERN Staff Association appointed Dr Alessandro Raimondo, a CERN staff member from the EN Department, to the PFGB with effect from 1 May 2012. Mr. Raimondo was subsequently appointed by the PFGB as a member of the Investment Committee. Mr Sylvain Weisz, appointed to the PFGB by the CERN Staff Association since 2010, was unanimously appointed Vice-Chairman of the PFGB by the Council at its June session. I wish them both success in their new functions.

Dan-Olof Riska,
Chairman, Pension Fund Governing Board



News from the Library

Mendeley helps you to organize the papers you read, share them with colleagues, and create bibliographies and reference lists. These papers can be accessed anywhere and on any electronic device.

Mendeley currently has over 1.7 million active users in the world. It contains, therefore, a large crowd-sourced information library, with over 242 million documents.

Recently, the software has opened up new pathways for collaboration and interaction between individual students and researchers and their institutions' libraries. The fee-based institutional edition of Mendeley not only allows access to the Library's online

Mendeley is a free bibliographic reference manager and academic social network. This online platform enables researchers to discover scientific publications and to collaborate with others online.

resources, but also facilitates communication and collaboration within your group on the platform.

The CERN Library has now opened a free trial to the Mendeley institutional edition till December 2012.

If you don't have a Mendeley account already, you can create it for free here and send us an e-mail if you want to join the CERN institutional group. Don't hesitate to give it a try and give us your feedback.

CERN Library

Stay connected and informed, try Mendeley!

CERN Library and Collide@CERN present:

Painter Nils Hedenskog and photographer Joakim Brolin

Nils Hedenskog and Joakim Brolin collaborate on crawling performances called "**Creeping in Circles**", resulting in a series of hybrid images of movement and light. They show poetical analogies with scientific results at CERN.

"**Creeping in Circles**" by Nils Hedenskog and Joakim Brolin will be shown on Tuesday, 24 July 2012 at 4 p.m. in the Library (bldg. 52 1-052).

*** Tea and coffee will be served at 3:45 p.m. ***

Hannes Schwarzauer (1950 - 2012)

Hannes came to CERN in October 1973 to take up a post with the Computer Operations Group in DD Division, leaving Stuttgart where he had been working up until then.

He quickly settled into the task of computer operations, becoming a very valued member of the team, demonstrating excellent skills in both technical knowledge and human relations. The latter was helped by his excellent command of both English and French, despite having had very little training in this particular domain.

He was much appreciated by his colleagues for his calmness and approachability, and was popularly known as "Schwarzy", a name which followed him throughout his entire CERN career.

Following the outsourcing of the computer operations service in 1991, he moved to the User Support Group, where he had already assisted with the Help Desk. He continued developing his computing skills such that



he provided PC 2nd level support, successfully deflecting many user queries away from the PC Group. He helped establish the hardware support contract, and made considerable effort for PC documentation in the QA database.

He was adamant in decisions regarding his lifestyle and overcame his long-term fear of

flying shortly after retirement with the aid of a course from an airline company.

Hannes enjoyed travelling, mainly by car; northern Scotland, Greece, Bulgaria and most other European countries. He arrived at CERN as a fully qualified football referee, much to the pleasure of the CERN Football Club, which profited from his availability.

Before retirement he established a second home in Austria where he spent much time and to where he later moved.

He will be sadly missed by all his friends and colleagues.

He leaves wife Christiane and daughter Nathalie, currently working in the ATLAS Secretariat.

His colleagues and friends

Claude Dangoisse (1956 - 2012)

We deeply regret to announce the death of Mr Claude Dangoisse on 1 July 2012.

Mr Dangoisse, who was born on 18 April 1956, worked in the IT Department and had been at CERN since 1st December 1979.

The Director-General has sent a message of condolence to his family on behalf of the CERN personnel.

Social Affairs
Human Resources Department



Claude had a long and rich career at CERN, having several successive jobs over 30 years. Arriving first at CERN as an electrician to participate in the PS and SPS cabling, he was then an operator of the CERN Meyrin Control room for almost 10 years. Then he joined the Telecom section where he was in charge of the telephone exchange infrastructure. His professional devotion, his constant good mood, and the help he gave to his colleagues, made him a colleague who was much appreciated by everyone. Many of us are losing both a colleague and a friend.

The funeral took place on the 5th of July in Sciez church (74).

His colleagues and friends



Official news

Members of the personnel shall be deemed to have taken note of the news under this heading. Reproduction of all or part of this information by persons or institutions external to the Organization requires the prior approval of the CERN Management.

ANNUAL INFORMATION MEETING OF THE PENSION FUND (GENERAL MEETING)

All members and beneficiaries of the Pension Fund are invited to attend the

**Annual Information Meeting to be held
in the CERN Council Chamber
on Wednesday 12 September 2012
from 10 am to 12 pm**

* Coffee and croissants will be served prior to the meeting as of 9:30 am.*

VISAS FOR SWITZERLAND AND FRANCE - TIME NEEDED TO PROCESS APPLICATIONS

Please note that any person required to be in possession of a visa in order to take up functions at CERN must start the application process sufficiently early to allow the visa to be issued in time.

The submission of an incomplete application, local circumstances and an increase in applications before the summer holiday period can all result in considerable variation in the time needed to process your application and issue the visa.

You are therefore recommended to submit your visa application at least three months, and not later than 21 days, prior to your departure date.

We would also like to remind you that the Swiss Consulate in Paris and the French Consulate in Geneva can issue visas exclusively to people resident within their respective spheres of competence (i.e. those who are holders of a French or Swiss residence permit respectively). You must therefore obtain all visas required for stays longer than three months in France or Switzerland from the visa-issuing authority competent for your usual place of residence before you take up your functions.

*Relations with the Host States Service
relations.secretariat@cern.ch
Tel.: 72848*



Take note

CERN'S LIVE WEBCASTS

You may well have noticed when watching the seminar on 4 July that the CERN webcast site has had a makeover (<http://webcast.web.cern.ch/webcast/>).

The new-look site went live on 26 June and provides a detailed schedule of upcoming webcasts as well as easy access to those of recent events. It is fully compatible with Smartphones and tablets – which wasn't the case until now – and enables viewers to see both the speaker and the presentation, thanks to two separate video recordings.

Another innovation: permanent webcasts. In a single click, you can access and view all the channels run by the ATLAS collaboration, including Public Outreach channel (<http://webcast.web.cern.ch/webcast/play.php?type=permanent&event=23>), Technical channel (<http://webcast.web.cern.ch/webcast/play.php?type=permanent&event=27>) and Public Development channel (<http://webcast.web.cern.ch/webcast/play.php?type=permanent&event=29>).

And if you want to add your own event to the schedule and broadcast it live via the web, just go to this address:

<http://information-technology.web.cern.ch/services/fe/webcast/howto/how-request-live-webcast-cern-event>

You can also restrict access to your webcasts to a pre-defined audience.

IT Department

LOCKS & KEYS SERVICE MOVES TO BUILDING 55

Please note that as of **July 12** Locks & keys service will be at **Building 55 second floor**.

The opening hours are as follows: 08:30 am to 12:30 pm - 1:30 pm to 5:30 pm.

The procedures and rules relating to applications for key and cylinder have not changed.

GS-IS Group



Language training

SUMMER FRENCH COURSES FOR BEGINNERS (9 JULY TO 23 AUGUST)

We are now offering a French course for beginners. If you are interested in following this course, please contact Kerstin Fuhrmeister - Tel.: 70896.

SUMMER ORAL EXPRESSION ENGLISH COURSE

An English Oral Expression course will take place this summer at some time between 25 June and 28 September. The exact dates will be decided according to the preferences of the students.

Schedule: to be determined (2 sessions of 2 hours per week).

Please note that this course is for learners who have a good knowledge of English (CERN level 7 upwards).

If you are interested in following this course, please enroll through AIS site.

Please be sure to indicate your planned absences in the comments field so we can schedule the course.

If you need more information please send a message to English.training@cern.ch



Safety Training Course

SAFETY TRAINING: PLACES AVAILABLE IN JULY / AUGUST 2012

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

July / August 2012

(alphabetical order)

Radiological Protection

27-JUL-12, 8.30 – 12.30, in English
10-AUG-12, 8.30 – 12.30, in English
21-AUG-12, 8.30 – 12.30, in English
24-AUG-12, 13.30 – 17.30, in English
28-AUG-12, 8.30 – 12.30, in English
31-AUG-12, 13.30 – 17.30, in English

Refresher course for Electricians in Low voltage

29-AUG-12 to 30-AUG-12, 9.00 – 17.30, in French

Refresher course for Electricians in Low and High voltage

30-AUG-12 to 31-AUG-12, .00 – 17.30, in French

Refresher course: Self-Rescue Mask Training

24-JUL-12, 8.30 – 10.00, in French
26-JUL-12, 8.30 – 10.00, in English
31-JUL-12, 10.30 – 12.00, in French
02-AUG-12, 10.30 – 12.00, in English
07-AUG-12, 8.30 – 10.00, in French
09-AUG-12, 8.30 – 10.00, in English
14-AUG-12, 10.30 – 12.00, in French
16-AUG-12, 10.30 – 12.00, in English
21-AUG-12, 8.30 – 10.00, in French
23-AUG-12, 8.30 – 10.00, in English
28-AUG-12, 10.30 – 12.00, in French
30-AUG-12, 10.30 – 12.00, in English

Radiological Protection

27-JUL-12, 13.30 – 17.30, in French
10-AUG-12, 13.30 – 17.30, in French
21-AUG-12, 13.30 – 17.30, in French
28-AUG-12, 13.30 – 17.30, in French

Self-Rescue Mask Training

24-JUL-12, 10.30 – 12.00, in English
26-JUL-12, 10.30 – 12.00, in French
31-JUL-12, 8.30 – 10.00, in English
02-AUG-12, 8.30 – 10.00, in French
07-AUG-12, 10.30 – 12.00, in English
09-AUG-12, 10.30 – 12.00, in French
14-AUG-12, 8.30 – 10.00, in English
16-AUG-12, 8.30 – 10.00, in French
21-AUG-12, 10.30 – 12.00, in English
23-AUG-12, 10.30 – 12.00, in French
28-AUG-12, 8.30 – 10.00, in English
30-AUG-12, 8.30 – 10.00, in French

Use of fire extinguisher – live exercises

25-JUL-12, 13.30 – 15.30, in French
27-JUL-12, 10.00 – 12.00, in English
01-AUG-12, 13.30 – 15.30, in French
03-AUG-12, 10.00 – 12.00, in French
08-AUG-12, 13.30 – 15.30, in French
10-AUG-12, 10.00 – 12.00, in French
15-AUG-12, 13.30 – 15.30, in French
17-AUG-12, 10.00 – 12.00, in French
22-AUG-12, 13.30 – 15.30, in French
24-AUG-12, 10.00 – 12.00, in French
29-AUG-12, 13.30 – 15.30, in French
31-AUG-12, 10.00 – 12.00, in French

Isabelle Cusato (HSE Unit)



Seminars

MONDAY 23 JULY

SUMMER STUDENT LECTURE PROGRAMME

Main Auditorium, Bldg. 500

09:15 BSM - Beyond the Standard Model (5/6)

GIUDICE, G. / CERN

10:15 From Raw Data to Physics Results (Experimental Physics) (3/3)

BOYD, J. / CERN

11:15 Detector simulation

RIBON, A. / CERN

12:00 Discussion Session

DVALI, G. / BOYD, J. / RIBON, A.

COMPUTING SEMINAR

11:00 - BE Auditorium Meyrin, Bldg. 6-2-024

Dealing with BIG Data - Exploiting the Potential of Multicore Parallelism and Auto-Tuning

V. PANKRATIUS / MIT

CONFERENCES & WORKSHOPS

MCnet-LPCC Summer School on Monte Carlo Event Generators for LHC

14:00 - TH Auditorium, Bldg. 4

TUESDAY 24 JULY

CONFERENCES & WORKSHOPS

MCnet-LPCC Summer School on Monte Carlo Event Generators for LHC

9:00 - TH Auditorium, Bldg. 4

SUMMER STUDENT LECTURE PROGRAMME

Main Auditorium, Bldg. 500

09:15 BSM - Beyond the Standard Model (6/6)

GIUDICE, G. / CERN

10:15 SM Physics at hadr.coll._exp_ (Experimental QCD, top, W/Z and Higgs Physics at hadron colliders) (1/4)

MAETTIG, P. / PROF UNIVERSITAET WUPPERTAL, GERMANY

11:15 Nuclear Physics

BLUMENFELD, Y. / CERN

12:00 Discussion Session

DVALI, G. / MAETTIG, P. / BLUMENFELD, Y.

WEDNESDAY 25 JULY

CONFERENCES & WORKSHOPS

MCnet-LPCC Summer School on Monte Carlo Event Generators for LHC

9:00 - TH Auditorium, Bldg. 4

SUMMER STUDENT LECTURE PROGRAMME

Main Auditorium, Bldg. 500

09:15 Neutrino Physics (1/3)

KAYSER, B. / FERMILAB

10:15 SM Physics at hadr.coll._exp_ (Experimental QCD, top, W/Z and Higgs Physics at hadron colliders) (2/4)

MAETTIG, P. / PROF UNIVERSITAET WUPPERTAL, GERMANY

11:15 Heavy Ions (From Heavy-Ion Collisions to Quark Matter) (1/3)

ANTINORI, F. / INFN PADOVA AND CERN

12:00 Discussion Session

KAYSER, B. / MAETTIG, P. / ANTINORI, P.

TH COSMO COFFEE

11:00 - TH Auditorium, Bldg. 4

Cold Positrons from Decaying Dark Matter

O. VIVES / U. VALENCIA

THURSDAY 26 JULY

CONFERENCES & WORKSHOPS

MCnet-LPCC Summer School on Monte Carlo Event Generators for LHC

9:00 - TH Auditorium, Bldg. 4

SUMMER STUDENT LECTURE PROGRAMME

Main Auditorium, Bldg. 500

09:15 Neutrino Physics (2/3)

KAYSER, B. / FERMILAB

10:15 SM Physics at hadr.coll._exp_ (Experimental QCD, top, W/Z and Higgs Physics at hadron colliders) (3/4)

MAETTIG, P. / PROF UNIVERSITAET WUPPERTAL, GERMANY

11:15 Heavy Ions (From Heavy-Ion Collisions to Quark Matter) (2/3)

ANTINORI, F. / INFN PADOVA AND CERN

12:00 Discussion Session

KAYSER, B. / MAETTIG, P. / ANTINORI, P.

COLLIDER CROSS TALK

11:00 - TH Auditorium, Bldg. 4

CMS ICHEP Result: EXO-12-002

K. KAADZE / CERN

FRIDAY 27 JULY

CONFERENCES & WORKSHOPS

MCnet-LPCC Summer School on Monte Carlo Event Generators for LHC

9:00 - TH Auditorium, Bldg. 4

SUMMER STUDENT LECTURE PROGRAMME

Main Auditorium, Bldg. 500

09:15 Neutrino Physics (3/3)

KAYSER, B. / FERMILAB

10:15 SM Physics at hadr.coll._exp_ (Experimental QCD, top, W/Z and Higgs Physics at hadron colliders) (4/4)

MAETTIG, P. / PROF UNIVERSITAET WUPPERTAL, GERMANY

11:15 Heavy Ions (From Heavy-Ion Collisions to Quark Matter) (3/3)

ANTINORI, F. / INFN PADOVA AND CERN

12:00 Discussion Session

KAYSER, B. / MAETTIG, P. / ANTINORI, P.

MONDAY 30 JULY

SUMMER STUDENT LECTURE PROGRAMME

Main Auditorium, Bldg. 500

09:15 Antimatter (Antimatter in the Lab) (1/3) - DOSER, M. / CERN

10:15 BSM (Search for Beyond the SM Physics at hadron colliders) (1/3)

SPHICAS, P. / CMS, CERN AND UNIVERSITY OF ATHENS

11:15 Particle Accelerators in Cancer Therapy (1/2)

AMALDI, U. / TERA FOUNDATION MILANO, ITALY

12:00 Discussion Session

SPHICAS, P. / DOSER, M. / AMALDI, U.

TUESDAY 31 JULY

SUMMER STUDENT LECTURE PROGRAMME

Main Auditorium, Bldg. 500

09:15 Antimatter (Antimatter in the Lab) (2/3) - DOSER, M. / CERN

10:15 BSM (Search for Beyond the SM Physics at hadron colliders) (2/3)

SPHICAS, P. / CMS, CERN AND UNIVERSITY OF ATHENS

11:15 Particle Accelerators in Cancer Therapy (2/2)

AMALDI, U. / TERA FOUNDATION MILANO, ITALY

12:00 Discussion Session

SPHICAS, P. / DOSER, M. / AMALDI, U.

WEDNESDAY 1 AUGUST

SUMMER STUDENT LECTURE PROGRAMME
Main Auditorium, Bldg. 500

09:15 Antimatter (Antimatter in the Lab) (3/3) - DOSER, M. / CERN

10:15 BSM (Search for Beyond the SM Physics at hadron colliders) (3/3)

SPHICAS, P. / CMS, CERN AND UNIVERSITY OF ATHENS

11:15 String Physics

LAMBERT, N. / CERN

12:00 Discussion Session

SPHICAS, P. / DOSER, M. / LAMBERT, N.

TH COSMO COFFEE

11:00 - TH Auditorium, Bldg. 4

Galactic Dark Matter profiles

F. NESTI / L'AQUILA

THURSDAY 2 AUGUST

SUMMER STUDENT LECTURE PROGRAMME
Main Auditorium, Bldg. 500

09:15 Astroparticle Physics (1/3)

BINETRUY, P. / APC U. PARIS 7 DENIS DIDEROT

10:15 Physics at future colliders

LE DIBERDER, F. / LAL, ORSAY

11:15 Future Collider Technologies (1/2)

SCHULTE, D. / CERN

12:00 Discussion Session

BINETRUY, P. / LE DIBERDER, F. / SCHULTE, D.

FRIDAY 3 AUGUST

SUMMER STUDENT LECTURE PROGRAMME
Main Auditorium, Bldg. 500

09:15 Astroparticle Physics (2/3)

BINETRUY, P. / APC U. PARIS 7 DENIS DIDEROT

10:15 Astroparticle Physics (3/3)

BINETRUY, P. / APC U. PARIS 7 DENIS DIDEROT

11:15 Future Collider Technologies (2/2)

SCHULTE, D. / CERN

12:00 Discussion Session

BINETRUY, P. / SCHULTE, D.

MONDAY 6 AUGUST

SUMMER STUDENT LECTURE PROGRAMME
Main Auditorium, Bldg. 500

09:15 Cosmology (Introduction to Cosmology) (1/4)

VERDE, LICIA / ICREA AND ISC, UNIVERSITY OF BARCELONA

10:15 B Physics and CP Violation (1/4)

RAVEN, G. / NIKHEF, AMSTERDAM, NETHERLANDS

11:15 LHC Upgrade - Accelerator Physics Challenges for the LHC upgrade (1/4)

HOLZER B. / CERN

12:00 Discussion Session

VERDE, L. / RAVEN, G. / HOLZER, B.

THURSDAY 9 AUGUST

SUMMER STUDENT LECTURE PROGRAMME
Main Auditorium, Bldg. 500

09:15 Cosmology (Introduction to Cosmology) (4/4)

VERDE, LICIA / ICREA AND ISC, UNIVERSITY OF BARCELONA

10:15 B Physics and CP Violation (4/4)

RAVEN, G. / NIKHEF, AMSTERDAM, NETHERLANDS

11:15 LHC Upgrade - Accelerator Physics Challenges for the LHC upgrade (4/4)

HOLZER B. / CERN

12:00 Discussion Session

VERDE, L. / RAVEN, G. / HOLZER, B.

TUESDAY 7 AUGUST

SUMMER STUDENT LECTURE PROGRAMME
Main Auditorium, Bldg. 500

09:15 Cosmology (Introduction to Cosmology) (2/4)

VERDE, LICIA / ICREA AND ISC, UNIVERSITY OF BARCELONA

10:15 B Physics and CP Violation (2/4)

RAVEN, G. / NIKHEF, AMSTERDAM, NETHERLANDS

11:15 LHC Upgrade - Accelerator Physics Challenges for the LHC upgrade (2/4)

HOLZER B. / CERN

12:00 Discussion Session

VERDE, L. / RAVEN, G. / HOLZER, B.

FRIDAY 10 AUGUST

SUMMER STUDENT LECTURE PROGRAMME
Main Auditorium, Bldg. 500

10:15 Closing Lecture

Y.K. KIM / FERMILAB, UNIVERSITY OF CHICAGO

WEDNESDAY 8 AUGUST

SUMMER STUDENT LECTURE PROGRAMME
Main Auditorium, Bldg. 500

09:15 Cosmology (Introduction to Cosmology) (3/4)

VERDE, LICIA / ICREA AND ISC, UNIVERSITY OF BARCELONA

10:15 B Physics and CP Violation (3/4)

RAVEN, G. / NIKHEF, AMSTERDAM, NETHERLANDS

11:15 LHC Upgrade - Accelerator Physics Challenges for the LHC upgrade (3/4)

HOLZER B. / CERN

12:00 Discussion Session

VERDE, L. / RAVEN, G. / HOLZER, B.

17:00 Poster Session

CERN: MEZZANINE (OUTSIDE MAIN AUDITORIUM)