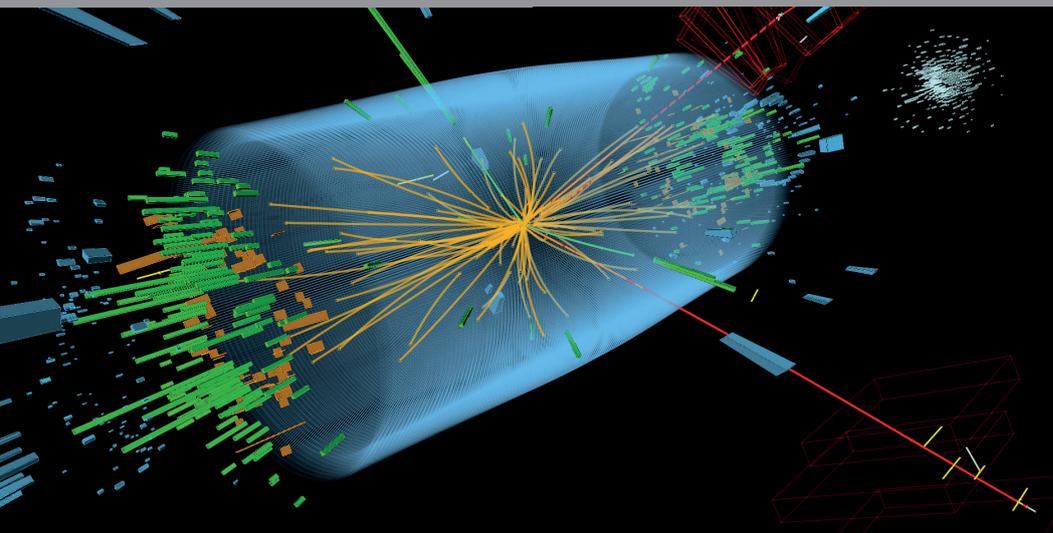


hermann

News from the Helmholtz Association



HELMHOLTZ
ASSOCIATION



Traces of the newly discovered particle in the CMS detector.

Picture: CMS Collaboration, CERN

Higgs Particle and Helmholtz Alliances

On 4 July 2012 at CERN in Geneva, Switzerland, two international research teams have presented the results obtained in experiments using the Large Hadron Collider (LHC). During the experiment projects ATLAS and CMS, they have observed a hitherto unknown particle with a mass in the spectrum of 125 to 126 gigaelectronvolt. This may well be the long sought after Higgs boson or Higgs particle, which could explain how elemental particles obtain mass.

Germany has a share of 20 per cent in the LHC, the currently largest particle accelerator in the world. Since 2007, the ATLAS and CMS researchers have been receiving support from the Helmholtz Alliance "Physics on the Terascale", which integrates 17 universities, DESY, the KIT and the Max Planck Institute Munich in their work on central issues in the field of particle physics involving the highest energy levels. This alliance was brought into existence by Prof. Dr Rolf-Dieter Heuer, the current director of CERN, while he still was employed in his previous post as research director at DESY. His aim was to bundle the German competences in the fields of data analysis, detector development, com-

puting and accelerator technology. The alliance receives financial support totalling 25 million Euro from out of the Helmholtz Association's Initiative and Networking Fund and, in addition, twice that sum from the 20 partnering institutions. The alliance focuses on the project-related cooperation between the partnering institutes. A special feature of the alliance are the more than 40 schools and workshops serving to train early career researchers. These are supported by both experimental and theoretical physicists. "The Helmholtz alliance was important for this discovery at the LHC," says Prof. Dr Joachim Mnich, Research Director at DESY. "For universities in Germany, the alliance has become a firmly established component in the research landscape," says Prof. Dr Klaus Desch, University of Bonn.

In order to process the enormous amount of data from the LHC experiments, computers from the partnering institutions were linked by so-called GRID computing (for example, at the Tier-1 centre GridKa at the KIT and at the Tier-2 centre at DESY). The alliance has provided a significant share of means towards the computing power required in Germany.

Dear Readers,



Universities are our privileged partners and we continuously further develop our network of collaboration. We have developed a multitude of measures for funding

joint research projects, in which scientists from the Helmholtz centres work together with partners from universities and research institutions from both within Germany and abroad. Now we provide funding for four more Helmholtz alliances and eleven new virtual institutes from out of the Initiative and Networking Fund. A total of 50 million Euro is allocated to the four new Helmholtz alliances and a total of 30 million Euro for the eleven new virtual institutes. Together with the universities, we can achieve a lot, just as a Helmholtz alliance has contributed to the discovery of the Higgs boson particle.

Wishing you enjoyable reading,
Yours faithfully,

Jürgen Mlynek, President

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www.helmholtz.de/abo-en



In Brief

Starting Signal for FAIR

One of the world's largest research facilities is being constructed at the GSI Helmholtz Centre for Heavy Ion Research in Darmstadt: The international particle accelerator FAIR. The Parliamentary State Secretary Dr Helge Braun now has presented the facility with a notice of granting totalling 526 million Euro. With these funds, the construction work in the immediate neighbourhood of the GSI Helmholtz Centre for Heavy Ion Research now can begin. Already, 3,000 scientists and engineers from more than 50 countries are working on the development of FAIR accelerators and pertinent experiments.

KIT: Solar Power from Plastic Film

The KIT is intensifying research on printable organic solar cells and intends to increase efficiency to over ten per cent within the next four years. To this end, the researchers employ tandem architectures combining solar cells with various absorption spectra. The German Federal Ministry of Education and Research funds the project with 4.25 million Euro. www.helmholtz.de/kit-sonnenstrom

Special Issue Women and Cancer

The DKFZ magazine 'einblick' publishes a special series to commemorate its 25-year anniversary. The first issue of this special series will be titled "Women and Cancer". The topics covered include pro and contra of mammography screening, cancer during pregnancy, the effect of sports on post-cancer treatment exhaustion as well as new results regarding the role of genes and hormones. The series will be continued with issues on men's and children's cancer respectively. www.helmholtz.de/dkfz-einblick-01-12

New Web-based Formats

The media centre of the website of the Forschungszentrum Jülich research centre now presents also popular science lectures by well-known experts to be viewed in the "Jülich Lectures" format. The service is augmented by audio-visual footage and a film about the Zeppelin project PEGASOS found under the section "Nahaufnahme Wissenschaft" (Science Close-up). www.fz-juelich.de/mediathek



Victor Hess (right in balloon basket) surrounded by curious onlookers after one of his balloon rides in the years 1911/12.

Photo: Victor Franz Hess Society

100 Years of Cosmic Radiation

On 7 August 1912, the Austrian physicist Victor F. Hess was able to prove the existence of high-altitude radiation penetrating the atmosphere from outer space during a balloon ride at 5,300 metres altitude above the Schwielochsee lake in south-east Brandenburg, using three ionisation measurement devices. He was not yet aware of the consequences of this discovery when he landed in Bad Saarow/Pieskow near the Scharmützelsee lake and travelled back on the train to Vienna via Berlin. The history of discovery of cosmic radiation was by no means a straightforward process.

In contrast to X-radiation, which was celebrated worldwide immediately after its discovery and effected a revolution of medical diagnostics within only a few years, more than 15 years passed before cosmic radiation was scientifically acknowledged.

The dispute was finally resolved with Hess being awarded the Nobel Prize in Physics in 1936. At the beginning of the 1950s, elementary particle physics shifted to focus on accelerator experiments. At first, astroparticle physics concentrated on investigating high-energy cosmic ray air showers. Yet the most in-depth insight into possible sources of cosmic radiation was made possible by the imaging atmospheric Cherenkov telescopes (IACTs) H.E.S.S., MAGIC and VERITAS, all of which involve also DESY. High-energy gamma radiation in particular already has helped to discover about 140 cosmic accelerators. In future, this history of success is to be continued with the Cherenkov Telescope Array CTA, again involving a considerable contribution from DESY.

Excerpt from an article by Dr Michael Walter for Physikjournal magazine

Event Information

From 6 to 8 August 2012, scientists from all over the world will meet in Bad Saarow/Pieskow to discuss the development of astroparticle physics. The symposium commemorating the 100-year anniversary of the discovery of cosmic radiation is organised by DESY in cooperation with the University of Potsdam and the Max Planck Institute for the History of Science.

www.desy.de/2012vhess

Background Information

The Helmholtz Alliance Astroparticle Physics pools the work of physicists from the Helmholtz centres KIT and DESY as well as from universities in Aachen, Berlin (Humboldt University), Bonn, Dortmund (Technical University), Dresden (Technical University), Erlangen-Nürnberg, Hamburg, Mainz, Münster, Munich (Technical University), Potsdam, Siegen, Tübingen, Würzburg, Wuppertal, from three Max Planck Institutes and from institutions in Paris and Chicago.

www.hap-astroteilchen.de

University Cooperation: New Helmholtz Alliances and Virtual Institutes



University campus of the Karlsruhe Institute of Technology, which receives funding for two virtual institutes.

Photo: KIT

The Helmholtz Association provides funds for four new Helmholtz alliances and eleven new virtual institutes in order to further expand the cooperation with universities and other partners. The eleven virtual institutes receive funds totalling 30 million Euro from out of the Helmholtz Association's Initiative and Networking Fund. The four new Helmholtz alliances are allocated 50 million Euro from out of the Initiative and Networking Fund. These funds are augmented by contributions from the involved partnering institutions.

In a Helmholtz alliance, usually several Helmholtz centres join forces with universities and extra-mural partners from within Germany and abroad to pool their respective competences and to quickly achieve results and international visibility in strategically important fields of research. Helmholtz alliances can receive funds from out of the Initiative and Networking Fund totalling up to 3 million Euro per year, in addition to the same amount coming from the respective Helmholtz centres by way of their individual contribution. The funding period is five years. ICE-MED is one of the new alliances receiving funding. It researches visualisation and treatment of environmental metabolic diseases. The alliance is headed by the Helmholtz Zentrum München and includes also the Forschungszentrum Jülich research centre, the MDC and the DKFZ. The Helmholtz Alliance ROBEX, headed by the AWI, is concerned with robotic exploration under extreme conditions. This alliance involves contributions from the Helmholtz centres DLR and GEOMAR. The Helmholtz Alliance Remote Sensing and Earth System Dynamics joins the forces of

the Helmholtz centres UFZ, Forschungszentrum Jülich, GFZ, Helmholtz Zentrum München, KIT, AWI, GEOMAR and DLR (in charge) with those of external partners to use remote sensing in the investigation of geoscience questions. The Helmholtz Alliance LIMTECH focuses on liquid metal technologies. It is headed by the HZDR and involves the Helmholtz centres KIT, Forschungszentrum Jülich, DLR as well as numerous other partners.

The focal topics of the eleven virtual institutes range from basic research, over the development of new solar technologies, to concrete medical research projects. In the Virtual Institute MetBioMat, for instance, scientists from the Helmholtz Centre Geesthacht and their colleagues from university research groups investigate how innovative magnesium-based implants are biologically degraded.

Virtual institutes receive up to 600,000 Euro per year over a period of three to five years from out of the Initiative and Networking Fund. This is augmented by the centres' own contributions, so that the research projects can be financed with up to 900,000 Euro per year. Within the scope of the five calls for application that have taken place so far, 99 virtual institutes were or are being funded with a total of almost 100 million Euro. A total of 326 university partners from 61 different German universities were or are involved. From the total sum of nearly 100 million Euro, a share of about 56 million Euro went or, respectively, goes to the universities. Virtual institutes can be used also as a means of preparation for larger networks, such as the Helmholtz alliances.

www.helmholtz.de/impulsfond

Helmholtz International

Last ERC Grants Call

The European Research Council issued its final call for applications for "Starting Grants" and for "Advanced Grants" within the context of its Seventh Framework Programme for Research. The research programmes must be conducted at an institution located in Europe. The German Federal Ministry of Education and Research has created the Nationale Kontaktstelle (NKS – National Contact Office) ERC for the purpose of providing the German research community with information and advice. The NKS offers also workshops on the ERC.

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www.nks-erc.de

www.erc-germany.de

Horizon 2020 Statements

The negotiations for the next EU Framework Programme for Research are ongoing. Accompanying these, a set of Helmholtz position papers is available, shedding light on the research fields included in the Horizon 2020 draft as well as on the role of research infrastructures. All statements can be downloaded from the internet. www.helmholtz.de/stellungnahmen

Horizon 2020: Environmental Research Innovation

Horizon 2020 is to be a framework programme for "research and innovation". "Innovation", however, needs to be defined in a broad sense as regards environmental research so that the Helmholtz Association also is able to continue its contribution towards solutions for social challenges on a European level. This is because, especially in the field of environmental research, the development of innovative technologies is a lesser point of focus than is socially relevant data collection. On 6 June 2012, the Brussels office of the Helmholtz Association organised a parliamentary lunch to discuss this issue. Prof. Bela Buck from the AWI, Dr Susanne Pfeifer from the Climate Service Center at the HZG and Prof. Jochen Zschau from the GFZ presented the diversity of what "innovation" can mean in environmental research to representatives from the European Parliament and the European Commission.

ENERGY-TRANS Alliance

In spring 2011, shortly after the nuclear catastrophe in Fukushima, Japan, experts around Prof. Dr Armin Grunwald, KIT, applied for a Helmholtz alliance, which was to deal with the socially necessary processes in transforming the energy supply. The application was assessed within a few months only and was given a recommendation for funding. In the mean time, the working title "Future Infrastructures of Energy Supply. On the Path to Sustainability and Social Compatibility" was shortened to ENERGY-TRANS. Since autumn 2011, about 50 experts from Helmholtz centres and partnering institutions have been working together in investigating the interaction between energy supply, distribution and storage on the one hand and institutional control and demand patterns on the other. The results are to provide action-oriented knowledge for an efficient and socially compatible configuration of the future energy system.

Helmholtz Centres Involved:

KIT, DLR, UFZ, Forschungszentrum Jülich

Partners: Stuttgart University, Freie Universität Berlin, Otto von Guericke University of Magdeburg, Centre for European Economic Research, Mannheim.

Running Period: 2011-2016

www.energy-trans.de

Position on EEG

UFZ economists around Prof. Dr Erik Gawel have defended the German Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz EEG). In a position paper titled "False Alarm: Cost Tsunami and Command Economy through Energy Transition?" they reject the criticism of the EEG being solely responsible for the high prices of electricity. They argue that there never has been a purely market-driven energy supply. The current infrastructure, too, has in the past decades been controlled by technology-political interventions. In their paper, the social scientists write that establishing the right framework conditions and effecting price adjustments does not yet constitute a command economy. www.helmholtz.de/standpunkt-eeeg



Helmholtz Energy Discussion

Some 60 guests from the world of research, politics and the general population had followed the invitation from the Helmholtz Alliance ENERGY-TRANS and had come to Berlin to attend the first Helmholtz Energy Discussion on 27 June 2012. The energy discussions are conceived as a platform for exchange and in future are to render open to discussion also intermediate results and theses generated by the work of the research groups involved in the alliance. The panel discussion included representatives from various groups involved in the energy transition, from the BUND Friends of the Earth Germany to the Deutsche Energie-Agentur (dena - German Energy Agency) and the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. The series of talks is to be continued in the coming year with an event in Brussels.

All discussion participants agreed as regards the basic premise: The energy transition can be managed not in a merely technocratic manner, but will be successful only if accepted and adopted by broad sections of society. This is the only way to render decisions and in particular also set agendas sufficiently reliable to encourage long-term investments. The panel agreed that therefore a bridge between the various viewpoints, interests and standards of knowledge needs to be built: A task for which the Helmholtz Alliance ENERGY-

TRANS is to compile a knowledge base. "The energy system consists not only of power plants, power lines, electrical outlets; it is not a purely technical system but a socio-technical system involving also the contribution from people. This is a perspective that is new to the Helmholtz Association," said Armin Grunwald.

The panel agreed also that the new energy supply system will be significantly more complicated than the old one as there are more stakeholders. The interaction of centralised and decentralised producers of energy, ranging from large-scale producers, over public utility companies, to private households, needs to be skilfully organised. However, Michael Weinhold, CTO Siemens Energy, brought attention to the fact that so far no overall concept for the energy transition exists. Instead, only subsystems are being built following particularist interests. As an example, Weinhold mentioned the solar facilities, which by now yield almost 30 gigawatt at peak performance, which then are simply fed into the old grid even though this was constructed only for a maximum load of 80 gigawatt. In contrast, Weinhold said he wishes to see the introduction of a systemic approach for Germany and Europe, which takes into consideration aspects such as safety and cost efficiency. Stephan Kohler from the German Energy Agency dena, which recently was criticised in particular by envi-

Members of the Panel Discussion

- Prof. Dr Armin Grunwald, *Spokesman of the Helmholtz Alliance ENERGY-TRANS and Head of ITAS at the KIT*
- Prof. Dr h.c. Reinhard F. J. Hüttel, *Vice-President of the Helmholtz Association and Scientific Director of the GFZ*
- Stephan Kohler, *Deutsche Energie-Agentur GmbH (dena - German Energy Agency)*
- Dr Holger Krawinkel, *Federation of German Consumer Organisations - vzbv*
- Dr Werner Neumann, *Spokesman for Energy Policy, Bund für Umwelt und Naturschutz Deutschland (BUND Friends of the Earth Germany)*
- Katherina Reiche, *Parliamentary State Secretary at the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety*
- Prof. Dr Ortwin Renn, *Spokesman of the Helmholtz Alliance ENERGY-TRANS (presentation), Stuttgart University*
- Prof. Dr.-Ing. Michael Weinhold, *CTO Siemens Energy, Siemens AG*

ronmental groups for its grid study, took this argument a step further: “Many people claim that decentralised is a good thing per se and if we were to decentralise our energy systems, we would no longer need compound systems. This is nonsense. 100,000 small PV systems are like a large-scale power plant that must be controlled.”

In his capacity as consumer representative, Holger Krawinkel stated that many house owners insulate their houses even without the need for incentive programmes and that they show interest in saving energy. “The consumer is willing to act, if he can, yet on the other hand is interested also in knowing about the costs.” Krawinkel compared the energy system with the health system, which likewise needs to be safeguarded by the state on the one hand, but contains market elements on the other. The energy system still lacks platforms and sections for negotiating the various stakeholder interests.

As the representative for environmental protection, Werner Neumann interjected that expert groups from the BUND had compiled concrete proposals for the implementation of the energy transition, pertaining to, for example, tenancy law, energy saving and decentralisation; so far, however, these proposals have not yet met

with much interest on part of politics.

State Secretary Katherina Reiche contradicted this statement: “As regards the energy transition, politics have moved forward to a degree many would not have thought possible only one year ago.” She said this is in spite of political management being highly complex as it requires the uniting of the European level, the federal level, the federal state level and the municipalities. “The development of renewable energy sources has progressed with a fast pace. However, the extension of the grid did not keep up with that pace, so that now we are facing problems with the grid.” Therefore, said Katherina Reiche, the civilian groups of society, who wanted the further development of the renewable energies, now have to support also the grid extension. Yet micro-management and control are not tasks within the responsibility of politics. Rather, she said, it is important to create framework conditions within which stakeholders from the economy and the social sphere can operate.

At the end of the event it had become clear that platforms for constructive exchange and transparent procedures in the decision-making process must constitute an integral part of the energy transition.

Antonia Rötger

Participation Creates Reliability

During her lecture on occasion of the Helmholtz energy talks in Berlin, Prof. Dr Gesine Schwan said that the energy transition is by no means a purely technological challenge that can be promoted by experts alone. “Institution of an energy ministry and decreeing these decisions in a top-down approach will not work. What is needed are consensual decisions, at least as regards the major questions.” She continued to say that only the inclusion of all stakeholder groups of society creates reliable decisions, which provide also the necessary planning security for long-term investments.

Yet a truly participatory approach requires also broadening the approach to research, moving from interdisciplinary to transdisciplinary cooperation. Schwan said that the knowledgeable society has at its disposal various different kinds of knowledge, not only knowledge developed in a scientific and methodological manner, but also knowledge developed by way of different points of view, interests and objectives. She warned that only the exchange between the various stakeholders and the

inclusion of their different points of view provides the opportunity for making long-term, good decisions reflecting the public welfare. However, this changes the role of scientific experts. Whereas their expert knowledge continues to be required, they are only one partner of many in the debate regarding making the right decisions in setting the agenda. Schwan said, also, this exchange could in turn open up new questions for science to deal with. “Yet we need to think these issues through to the end and need also to decelerate these processes. Panel discussions are not sufficient, they are simply a starting point from which to continue the debate.” *arö*



Prof. Dr Gesine Schwan is a political scientist and President of the Humboldt-Viadrina School of Governance in Berlin.

Fourth Helmholtz Energy Alliance

Since the beginning of 2012, the Helmholtz Association has been funding three new Helmholtz energy alliances focusing on innovative battery systems, the energy saving potential of chemical processes and on solar cells made from organic-anorganic components respectively. Now a fourth Helmholtz energy alliance was included for funding, which will research the potential of liquid hydrocarbons as a medium for the storage and transport of energy. Scientists from the German Aerospace Centre (DLR) in Stuttgart are joining forces with colleagues from Stuttgart University and the University of Bayreuth in developing a forward-looking, innovative approach to allow for the transport and storage of energy: They are optimising the generation and combustion of synthetic liquid hydrocarbons and are investigating their energy storage potential.

www.helmholtz.de/dlr-energieallianz

Energy Roadmap

On commission by Greenpeace International, experts from the DLR have compiled a global scenario for a sustainable energy supply. The study Energy [R]evolution indicates ways for how to achieve this by the year 2050. More than 80 per cent of primary energy are to be generated from renewable energy sources. At present, the global energy supply still is based on more than 80 per cent generation from fossil sources of energy. By 2050, 94 per cent of the global demand for electrical power could be generated from renewable energy sources; wind energy, photovoltaics and geothermal energy could cover 60 per cent of the worldwide demand for electricity. “With our scenario 2012, we were able to show that it is possible for the world to dispense with using oil and gas resources even faster than we had predicted in our 2010 evaluation,” explains Thomas Pregger from the DLR Institute of Technical Thermodynamics. Greenpeace intended the scenario to demonstrate that the secure supply of energy is possible also without the need for oil boreholes in the Arctic and the exploitation of oil shale and shale gas. The study is available following this online link:

www.helmholtz.de/dlr-roadmap-energie

What is TEEB?

TEEB – The global study on The Economics of Ecosystems and Biodiversity

TEEB is an acronym for “The Economics of Ecosystems and Biodiversity”: A major global project to counteract the threatening and massive losses of biological diversity (biodiversity). TEEB is to give visibility worldwide to the economic benefits of biodiversity and to highlight the growing costs resulting from the loss of biodiversity and degradation of ecosystems. The study is designed to be interdisciplinary. The experts aim at developing options for measures and practical action moving forwards for society, the world of politics and the economy by drawing together expertise from the natural and the social sciences. The project was inaugurated in 2007 under the patronage of the United Nations Environment Programme (UNEP) and was scientifically coordinated by the Helmholtz Centre for Environmental Research – UFZ. The TEEB study was headed by Pavan Sukhdev.

More than 500 scientists have analysed and evaluated thousands of studies, policy approaches and economic methods in compiling the TEEB study. The final report, which was presented in autumn 2010 during the tenth meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD COP10) in Nagoya, Japan, uses the example of forests, cities and mining to demonstrate how ecosystem services could be assessed and taken into account from an economic point of view. The conclusion: The services rendered by insects, beetles, fungi, soil organisms, plants and vertebrates cannot be replaced and often these cease to function, if individual elements go missing within an ecosystem. Therefore it is an urgent economic requirement to develop effective measures counteracting the further loss of biological diversity. The reports published in 2009 and in 2010 concluded the study. The current phase deals with the practical application of TEEB in the context of national studies and projects. In Germany, this task is performed by the “Natural Capital Germany – TEEB DE” project, which is coordinated at the UFZ and headed by study manager Prof. Dr Bernd Hansjürgens.



View across Rio de Janeiro, Brazil.

Photo: Johannes Förster

Rio+20 in the Social Media

The United Nations Conference on Sustainable Development in Rio de Janeiro, Brazil took place from 20 to 22 June 2012. In the run-up and parallel to the conference, more than 45,000 visitors from all over the world were able to participate in hundreds of events. Many service provisions in the social media enabled also those not able to attend the event in Rio, to follow the debates in the context of Rio+20 and to take part in the discussions.

The conference organisers offered various online opportunities for gathering information or participating in the discussion. The UN Webcast provided in the internet live broadcasts of press conferences, round tables and plenary sessions from the Rio conference. Even after the end of the conference, these can still be accessed by way of video on demand. Since April 2011, there is an official Facebook site for the UN conference with more than 26,000 fans by now as well as a Twitter profile with more than 22,000 followers. Under hashtags such as #rioplus20 or #rio20, Twitter users sent up to 1,500 tweets per day during the conference and thereby reached out to a community of some 6 million Twitter users.

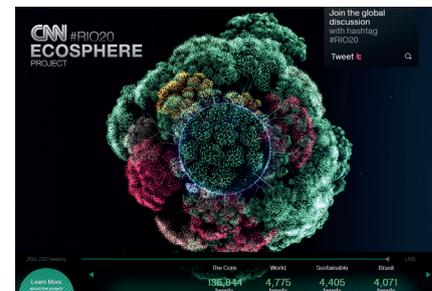
The social media team of the United Nations blogs reports that more than 50 million people have participated in the online conversation on the “Future we want” initiative since its start in November 2011, using social media platforms. According to an evaluation by the UN team, more than a billion tweets with the hashtag #RioPlus20 have been sent in total within the English-speaking community on Twitter.

On 19 June, the symposium “Rio+Social” took place in Rio, a joint initiative of the UN and various partners. This symposium’s ongoing objective is to publicly explore how social media and technology can play a pivotal role in creating sustainable solutions for the future of the planet. The Rio+Social Facebook page has more than 25,000 fans. On Twitter, everybody can take part in the discussion under hashtag #rioplussocial.

The UN uses also a tool called Wikicurve to present the global sustainability summit. It streams user opinions in real time and il-

lustrates the degree to which certain events enter into the awareness of the users. Everybody can add events and evaluate these on a scale from one to ten. The degree of perception of certain issues and their movement in politics and public sentiment is mapped in a six-step sequence, from “Discovery” to “Mainstream Acceptance”. So far, however, none of the four issues tracked – Action and Concern on Biodiversity, Action on Climate Change, The Green Economy and Sustainable Development Goals – have made it to mainstream acceptance.

The CNN Ecosphere visualises Twitter discussions in real time: Tweets with the hashtag #rio20 are summarised and attributed to specific topics. Each tweet stimulates the growth of individual plants. The degree and pace of growth depend on how the discussion develops. Similar tweets are grouped on branches to illustrate talks. A scrollable timeline maps the state of discussion since 1 June 2012.



The Ecosphere visualises the Twitter debate regarding the Rio+20 conference. Picture: Screenshot

Social media has the potential of reaching out to a large group of people, who have at their disposal devices for accessing the internet, and of encouraging them to take part in current debate. However, this excludes that part of mankind with no means of access to the internet. This is the majority of the world population. It would be inadequate to solely rely on the voluntary initiative of the civilian population and enterprises. Establishing the governmental framework conditions for more sustainability remains a task for politics.

Franziska Roeder

More information and links:
www.helmholtz.de/hermann

Voices on the Rio+20 Conference

The UFZ researchers Dr Irene Ring (Deputy Head, Department of Economics, Head of the Working Group Conservation of Nature & Biodiversity), Johannes Förster (PhD student, Department Computational Landscape Ecology) and Christian Klassert (PhD student, Department of Bioenergy) talk about their experiences in Rio.

Which position does science have within a major conference such as Rio+20?

Irene Ring: Science makes its contribution in particular by way of the so-called “side events”, where we ourselves were represented with a presentation on our current EU project POLICYMIX. This year’s International Society for Ecological Economics (ISEE) conference even took place in “tandem” with Rio+20, directly preceding the summit.

Was scientific expertise asked for in Rio?

Ring: The international TEEB initiative, which is scientifically coordinated by the UFZ, enjoyed a great degree of prominence in Rio. I presented a TEEB session featuring lectures on the national and

regional implementation, my colleague Christoph Schröter-Schlaack introduced our new project “Natural Capital Germany – TEEB DE”.



Dr Irene Ring

What is your assessment of the conference’s results?

Ring: Policy makers were unable to agree on demanding objectives. Yet our global markets need strong and reliable institutional framework conditions, which ultimately can be created only by politics.

Complete interview: www.helmholtz.de/ring

Which topic interested you most during the conference?

Johannes Förster: I am interested in interdisciplinary initiatives for the sustainable use of land and resources, which were presented during the conference in the context of the “Green Economy” topic (TEEB, amongst others). Here, there still were difficulties in agreeing on a definition of Green Economy.

to do this. The manner of land use for the production of raw materials often plays a great role.



Johannes Förster

Were you able to contribute your expertise?

Förster: I coordinated side events of the TEEB initiative and contributed a poster illustrating my work in GLUES to the ISEE conference. In the RioCentro, we announced the new report “TEEB for Water and Wetlands” and presented some of the prospective content.

Complete interview: www.helmholtz.de/foerster

Were you able to observe progress?

Förster: In the Natural Capital Declaration, 39 enterprises and more than 50 states declare themselves willing to improve their assessment of the role of natural capital or, rather, of the external costs in their economy. PUMA is one of the first enterprises

Which topic interested you most during the conference?

Christian Klassert: I am interested in how the challenges of increasing demand for agrarian products are dealt with. The demand for food from a growing world population, the increasing consumption of meat in the emerging countries and the increasing demand for bioenergy place high demands on our land use systems.

however, these remain rather vague.

Were you able to contribute your expertise?

Klassert: I presented a paper on the POLICYMIX project during the ISEE conference. In this project, we research the possible fields of application of economic policy instruments for protecting biodiversity.

Complete interview: www.helmholtz.de/klassert



Christian Klassert

What is GLUES?

GLUES – Concepts for the sustainable use of the limited resource land

GLUES (Global Assessment of Land Use Dynamics, Greenhouse Gas Emissions and Ecosystems Services) is a part of the German Federal Ministry of Education and Research’s funding programme “Sustainable Land Management” (Module A) and is scientifically coordinated by the Helmholtz Centre for Environmental Research – UFZ. The project investigates the interdependencies arising from land use and the resulting emission of greenhouse gases as well as the effects of land management on ecosystem services. Such interdependencies can be very well registered in forests, for example. If forested areas are cleared for agrarian use of the land, the climate regulating potential of the forest is lost. Intensification of land use poses also an increasing threat to biodiversity. For instance, the amount of land that is irrigated has doubled between 1960 and 2000, and in the same period, the total use of nitrogen, phosphate and pesticides has increased exponentially. This causes the disappearance of many beneficial insects, which render valuable services in pollinating fruit-bearing trees and other plants.

Many interdependencies have not yet been sufficiently researched to deduct clear strategies for providing a solution to these important issues. Likewise, there is uncertainty as regards application. The GLUES project therefore puts particular emphasis on connecting scientific basic research with practical applications. By synthesis of the results from the regional research projects and their preparation for the various groups of users and stakeholders, the scientists intend to demonstrate which forms of land use and ecosystem services can minimise the emission of climate-damaging greenhouse gases.

Awards

Prof. Dr Jürgen Mlynek, President of the Helmholtz Association, was awarded an honorary doctorate by the natural sciences faculty of the University of Ulm. By bestowing the distinction *Dr rer. nat. h.c. (Hon. D. Natural Sciences)*, the university honours the physicist's outstanding scientific achievements as manifested in numerous seminal publications in the world of science.

The **HZDR** and the **DKFZ** again received an award for their family-conscious personnel policy. During a festive event in Berlin, they were awarded the *Audit berufundfamilie* certificate issued by the *berufundfamilie gGmbH*, an initiative of the non-profit Hertie Foundation.

The chemist **Prof. Dr Paul Kögerler** was awarded a "Starting Grant" from the European Research Council (ERC). He receives about 1.5 million Euro for his research on materials for future computers. Since 2006, Kögerler has been group leader for molecular magnetism at the Jülich-based Peter Grünberg Institute.

Dr Markus Schubert from the HZDR was selected by the European Research Council to receive an ERC Starting Grant. With the funding sum totalling almost 1.2 million Euro, the scientist intends to for the first time visualise currents in chemical reactors and to research their influence on operation performance.

Prof. Dr Christian Koos from the KIT was awarded the *Alfried Krupp Sponsorship Prize for Young University Teachers* endowed with one million Euro. At the Institute of Photonics and Quantum Electronics (IPQ) and at the Institute of Microstructure Technology (IMT), both KIT, the 34-year old engi-

neering science professional works on nanophotonic building elements, which can render communication processes faster and more energy efficient.

Dr Francesco Grilli from the Institute for Technical Physics (ITEP) at the KIT is to receive the *Dr Meyer-Struckmann Science Prize* endowed with 15,000 Euro. Grilli heads a Helmholtz Young Investigators Group for the measurement and simulation of alternating current losses in high-temperature superconductors.

Dr Liane Rheinschmitt from the KIT was distinguished for her research on an intelligent artificial eye lens. The Daimler and Benz Foundation honoured her outstanding doctoral thesis with an award endowed with 10,000 Euro.

The EnBW Foundation and the KIT jointly awarded the *Heinrich Hertz Prize* to **Prof. Dr Manfred Thumm**. The former head of the KIT Institute for Pulsed Power and Microwave Technology (IHM) received the award endowed with 10,000 Euro for his work on microwave power for fusion research.

The **amcure GmbH** received the second prize of the *CyberOne Award* as well as the *Special Award of the Federal State of Baden-Württemberg* for its development of an active agent for the treatment of pancreatic cancer. *amcure* is a start-up company that was established by three scientists from the KIT Institute of Toxicology and Genetics (ITG) and a member of the KIT's innovation management. The *CyberOne Award* and the *Federal State Special Award* each are endowed with 5,000 Euro.

The Nuclear Physics Division of the European Physical Society (EPS) awards the *Lise Meitner Prize* to **Prof. Dr Karheinz Langanke** from the GSI and the Technical University Darmstadt and **Prof. Dr Friedrich-Karl Thielemann** from the University of Basel.

Adjunct professor **Dr Dr Angelika Riemer** from the DKFZ was elected a member of the *Junge Akademie*. Together with her junior research group at the DKFZ, she is developing a vaccination against cervical carcinoma that does not prevent but heals.

Calls for Application

As of 2012, the German Federal Ministry of Education and Research (BMBF) will award the new **Science Award for Excellent Research for Sustainable Development**. The award will honour scientific contributions to the national sustainability strategy and to the high technology strategy in the fields of climate protection, resource protection and energy, for example, projects in the context of the BMBF framework programme FONA – Research for Sustainable Development.

With the new prize, introduced at the end of the Science Year 2012 "Project Earth: Our Future", the BMBF sets new points of focus each year. In 2012, the award will go to researchers or research teams promoting "Sustainability Made in Germany". The prize will be awarded on 7 December 2012 in the context of the award ceremony for the German Sustainability Award.

Cut-off date for submissions:
31 August 2012
www.forschungspreis.de

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