Physics Comment

A Southern African Physics Magazine

Vol. 3, Issue 2, June 2011

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Editor's Note

The new issue of Physics Comment (PC) falls into a busy period for many physicists who work as academics at the universities of South Africa – the examination and marking period with between 500 and 1000 scripts in some first-year courses. Maybe it helps to remember the good cause: we prepare a new generation of physicists and engineers who might work on the Square Kilometre Array SKA (completed ca in 2024, hopefully in SA) or in other important future projects. What the near future holds in terms of radio astronomy (the MeerKAT) and otherwise (a start-up in quantum technology) is described in two articles in this issue of PC. The new PC also highlights the recent international conference on Women in Physics which took place in Stellenbosch and had an international press echo. We print with kind permission a column of Dr Rachel Ivie from Maryland in the US which first appeared in the online magazine of the American Institute of Physics *AIP Matters.* I personally recommend to download the *Integrated Resource Plan for Electricity 2010-2030* of the Department of Energy to see how the energy demand in South Africa is planned to be covered from coal, nuclear, renewable and other energy sources. The corresponding link is given on page 6.

Anyway, I wish you an interesting read with the current issue of PC and see you soon on the SAIP conference in Pretoria!

My thanks go out to Mr Brian Masara who invaluably helped me again with the editing process!

Prof Thomas Konrad

Physics Comment is a journal published by the South African Institute of Physics (SAIP) and appears quaterly. The vision of the SAIP is to be the voice of Physics in South Africa.

News from South Africa

South Africa successfully hosts ICWIP 2011

By Thomas Konrad (UKZN, Durban)

The fourth International Conference on Women in Physics (ICWIP) was hosted by Women in Physics in South Africa (WiPiSA) and SAIP in Stellenbosch from the 5. to the 8. April. After the conference had been heldt in intervals of three years in places as illustrious as Paris (France), Rio de Janeiro (Brazil) and Seoul (South Corea) it came this year to the Cape, successfully shaped by a team around Dr. Irvy Gledhill from the CSIR. The conference series was initiated to monitor, analyze and improve the status of women in physics, which are still globally underrepresented in physics and engineering. One of the invited speakers, Dr. Rachel Ivie from the Statistical Research Center of the American institute of Physics (AIP), reported in a lead story for the American sister of *Physics Comment*– the online magazine *AIP Matters* - on her visit and talk at the conference. The article is reprinted with kind permission from Dr. Ivie and AIP below.

Illuminating the situation of women in physics

Guest column by Rachel Ivie, Assistant Director, AIP Statistical Research Center, Maryland (USA)
Reprinted with permission from AIP Matters, May 2, 2011. Copyright 2011, American Institute of Physics.

Physics has always been a collaborative, international enterprise. Nowhere is this more evident than in the participation of AIP and its Member Societies in the International Union of Pure and Applied Physics (IUPAP). Its mission is "to assist in the worldwide development of physics, to foster international cooperation in physics, and to help in the application of physics toward solving problems of concern to humanity."

Rachel Ivie (4th from left) and AAPT's Beth Cunningham (2nd from right) are enjoying the banquet at the IUPAP 4th International Conference on Women in Physics with delegates (left to right) Emma Ideal (US), Rhiannon Meharchand (US), Maria Hadjipanayi (Cyprus), Florence Mutonyi D'ujanga (Uganda), Elizabeth Freeland (US), Renée-Andrée Koornstra (Netherlands), and Kukka Banzuzi (Finland).

AIP and several of our Member Societies are represented on the US Liaison Committee for IUPAP, one of whose goals is to promote "diversity and careers of young scientists. "Accordingly, the US presence in one of IUPAP's working groups, the Working Group on Women in Physics, is very prominent. Recently, this working group organized the 4th International Conference on Women in Physics in Stellenbosch, South Africa. More than 200 physicist delegates, both men and women, from about 50 countries attended this conference.

I was honoured to be one of six plenary speakers featured at this conference. My participation was funded by South Africa's bid to host the Square Kilometer Array. While I was in South Africa, I toured the Laser Research Institute at the University of Stellenbosch, where I was pleased to see the OSA Student Chapter banner proudly

displayed.

Ivie with a poster advertising South Africa's bid for the Square Kilometer Array (SKA). Meerkats are the mascot for the project, and MeerKAT (the Karoo Array Telescope) is a precursor instrument for the SKA. ("Meer" is an Afrikaans word for "more.")

My talk marked the unveiling of the results of the Global Survey of Physicists, conducted by the Statistical Research Center (SRC) for the Women in Physics Working Group. Almost 15,000 male and female physicists from more than 130 countries responded to the survey, which was made available in eight different languages. The survey was supported by the Henry Luce Foundation. Because the survey was conducted for the Women in Physics Working Group, one of its purposes was to document differences between the experiences of men and women in the field of physics. Some of the findings include the following:

- Early educational experiences are very important for both men and women in choosing physics.
- Female physicists report having less access to professional opportunities and resources than male physicists.
- Female physicists who have children report progressing much more slowly in their careers than those without children and all male physicists.

The survey was a collaborative effort among the members of the SRC and many different physical societies around the world, who worked together to develop and distribute the questionnaire. The resulting data suggest that it is time to undertake another collaborative effort, that of working to make physics equally accessible to all. Soon, IUPAP's Women in Physics Working Group will release the resolutions from this conference. Stay tuned.

Kevin Govender wins NSTF Award

From the South African Astronomical Observatory (SAAO) press release on the 27.05.11 by Thembela Mantungwa (SAAO, Cape Town)

Mr. Kevin Govender, the Director of the new Office of Astronomy for Development (OAD) won the prestigious National Science and Technology Forum (NSTF) BHP Billiton award. The awards were established in 1998 to recognise the stellar work done by scientists and the huge contribution they make towards research and development in South Africa.

The awards were presented by the Minister of Science and Technology (DST), Mrs. Naledi Pandor, on May, 27th at a glamorous affair in Kempton Park, Emperor's Palace. Kevin's award was in the category of "Communication for outreach and creating awareness of science, engineering, technology or innovation" This was in recognition of the work he has done during his tenure as the Manager of Salt Collateral Benefits Programme. In particular, during International Year of Astronomy 2009 which put SAAO on the map and the OAD office is as a result of that effort and more.

The acting director of SAAO, Prof. Patricia Whitelock was elated by the announcement. Here is what she said after receiving the news: "I am absolutely delighted, Kevin has worked tirelessly to show how science in general, and astronomy in particular, can make the world a better place - he most certainly deserves the award". Delivering the key note address was the Minister of DST, Mrs. Naledi Pandor, among other dignitaries were Phil Mjwara, DST Director General, Dr. Xolani Mkhwanazi, Chairman of BHP Billiton, Prof. Mamphela Ramphela, Chair of Technology Innovation Agency, Prof. Brenda Wingfield, NSTF Chair, Prof. Stephanie Burton, NSTF Deputy Chair and other guests of note.

The NSTF-BHP Billiton Award is the flagship of the largest and most prominent multi-stakeholder representative forum for Science Engineering Technology Innovation (SETI) in South Africa.[...] It is therefore an exceptional privilege to be a finalist. The key players in the field of national strategic importance have been carefully selected from a long list of nominations.

News from National Science and Technology Forum

By Prof Diane Grayson

The first plenary meeting of 2011 of the National Science and Technology Forum (NSTF) focused on government planning of South Africa's electricity supply. Relevant documents, including the National Integrated Resource Plan for Electricity, can be accessed from

http://www.nstf.org.za/nstfWebPortal/appmanager/nstfWeb/nstf?_nfpb=true&_pageLabel=nstf_portal_page_6

The very informative eNewsletters can be accessed from http://www.nstf.org.za/ and selecting eNewsletter Archives.

Remark by the Editor:

The Integrated Resource Plan for Electricity initiated by the Department of Energy lists the planed new fleet of power plants for South Africa between the year 2010 and 2030. It proposes to build a higher percentage of renewable energy power plants (42% or 17.8 GW) compared to the previous version (30%). The plan would bring the energy share in South Africa from 90% coal, 5% nuclear and 0% renewable in 2010, to 65.5% coal, 20% nuclear and 9% renewable energies in 2030. However, it was said on the NSTF meeting that the negotiations on carbon emissions in the context of UN climate summit COP17 taking place in Durban later this year could turn out to be fatal for the plan concerning the usage of coal.

SAIP introduces eVoting System

By Brian Masara (SAIP office, Pretoria)

The SAIP will this month introduce an eVoting system. The SAIP 2011 elections will take place through electronic voting. However those members without emails will still use the traditional postal ballot system.

With adoption of the new constitution SAIP can now use modern voting methods such as eVoting. The previous constitution only allowed for postal ballots, this process was expensive and normally required a lot of time. It also gave rise to delays and few members voting. We hope with the new eVoting system 100% of voting members will cast their vote since their votes will be a click away.

SAIP Council Elections 2011

Letter to SAIP members from the SAIP Secretary Dr Jackie Nel

Dear SAIP Voting Members

Nominations have been received for members of the next SAIP Council, who will take office as from July 2011 until the Annual Conference in 2013. I would like to request that you take some time and read through the brief manifestos and CV of the nominees, and based on this, play your role in electing the next SAIP Council by casting your vote. This year we will be making use of technology for the first time, and the election will take place electronically. If you were a paid-up member of the SAIP on 31 December 2010, you will be eligible to cast your vote online. Please follow the detailed instructions below.

The voting will be open from 20 June until 4 July 2011

An email with instructions on how to vote will be sent to you from the SAIP Office please check your inbox.

Click here to view the candidates nominated for SAIP Council, nominations summary and candidates manifestos

Thank you for your participation
Best regards

Dr Jackie Nel
Honorary Sectretary SAIP
012 420 3580

Email: secretary@saip.org.za

Physics 500

By Brian Masara (SAIP office, Pretoria)

Physics 500 is an ongoing SAIP project and aims to identify and track physicists in Industry. The purposes of the project are to:

- Identify industries in South Africa that employ physicists,
- Identify physicists working in South Africa,
- Use this information to promote physics,
- Promote collaboration between the SAIP and industry.

Physicists who have a BSc degree (or higher) in physics and work in industry are encouraged to participate in the project and register on its website in order to strengthen the link between physics and industry in South Africa.

For more information and to register visit the project webpage at

http://www.saip.org.za/physics500/

SA PHYSICS GRADUATES DATABASE

By Thomas Konrad (UKZN, Durban)

The South African Institute of Physics supported by the National Research Foundation created a database of Physics Graduates in South Africa in order to monitor the statistics on the skills (shortage) in physics and to provide this critical information to government and funding agencies. The purpose is to enable South Africa to effectively plan for its physics needs in research and staff in industry and large scale research projects such as the SKA. SAIP encourages therefore all graduates to register (cp http://graduates.saip.org.za/index.php):

"If you have a degree in physics and you are currently working, studying or unemployed and resident in South Africa, or have studied physics in South Africa we kindly request you to sign up and give us your personal statistics. We need you! The statistics we collect, with your help, will be used to influence legislation, decision-making and all matters related to physics funding required for training more physicists.

Read more details on confidentiality and great benefits of signing up and updating your details

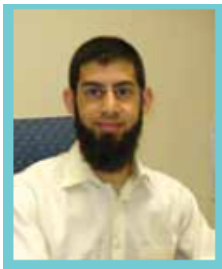
http://graduates.saip.org.za/background.php"

To register click here http://graduates.saip.org.za/register.php?action=new

For enquiries contact SAIP Office at info@saip.org.za

From Science To Business: Success Story From UKZN

By Abdul Mirza (UKZN, Durban)



Abdul Mirza, South Africa

Using quantum cryptography for network security

"I live in Durban, the largest city on the east coast of South Africa. It was one of the first few cities in Africa with a fibre-optic communications network, and is focusing on becoming the IT hub for the entire continent. My company, QZN Technology, focuses on communication security, otherwise known as encryption."

The SAIP in collaboration with the Institute of Physics (IOP)-UK hosted the Entrepreneurship for Physicists and Engineers in 2009. The IOP has now published a list of success stories from delegates who participate in various of its Entrepreneurship for Physicists workshops. Among these success stories is one from South Africa.

Our sector, the Quantum Information, Processing and Communication (QIPC) industry, is rapidly growing in South Africa – the Department of Science and Technology is investing in this area to help South Africa gain global market share. QZN Technology is the commercial face of the Centre for Quantum Technology (CQT), a research group at the School of Physics at the University of KwaZulu-Natal (UKZN) – my colleague Charles Freeman and I are both PhD students and, respectively, COO and CEO of QZN; Francesco Petruccione is our head of research at the centre and director of our company. We are fully embedded in the research and development of quantum technology, and therefore at the heart of a budding sector of the South African economy that the government is keen to expand. My team and I are experts in our field, but not trained entrepreneurs. At the end of 2009, the CQT had tasked me to develop a concept document for commercial ventures and put together a business plan for a company that we might form on the back of our research. It was perfect timing, so I signed up to attend IOP's workshop on entrepreneurial skills.

The workshop offered me an ideal arena in which to analyse case studies of scientists who have successfully marketed their research, as well as the opportunity to network with them. Learning through best practice was both inspirational and effective. The fundamentals of writing a business plan were something that I immediately applied to our funding applications, while creating a quantitative analysis of business opportunities and of the related costs, assisted me after that stage in my interactions with accountants and investors.

QZN Technology was launched in May 2010, at the same time as the Quantum Stadium Project, which ran during the 2010 FIFA World Cup and secured the communication link between the Moses Mabhida Stadium in Durban and the municipality's Joint Operations Centre. This offered us ample opportunities for pitching, development and networking, and we have now been operational since January 2011. We are currently negotiating with a few potential clients and investors, as well as securing solid international partnerships with companies such as Senetas in Australia. While Senetas manufactures high-speed conventional encryption systems and our

technology is still pre-emptive, this partnership will allow us to establish a firm market share in the information security market, which we will be able to bank on in the future.

The IOP workshop has given me, and therefore QZN Technology, relevant first-hand information for business development through carefully chosen case studies. I would certainly recommend it to someone considering attending, as it will also offer them a great networking opportunity and a platform for mentorship by experienced entrepreneurs. Since attending the workshop, my colleagues and I have presented talks at entrepreneurship workshops, offered internships to students in our labs and several of us have been involved with a Science Expo run by the Department of Education with a regional and national presence. Finally, QZN Technology will serve as an incubator for future commercial ventures in the field of quantum-based devices. We are championing the take-up of IOP's entrepreneurship curriculum as an integral part of the training of post-grads at UKZN – we know first-hand what a difference it will make.

For more information on success stories please contact

Dr Dipali Bhatt-Chauhan
Email: international@iop.org
www.facebook.com/instituteofphysics

Find out more about IOP for Africa on
http://www.iop.org/about/international/development/africa/index.html

Update on South Africa's MeerKAT array

By Marina Joubert, article prepared for SKA South Africa

The MeerKAT array, currently taking shape in South Africa's Karoo region, is a world-class radio telescope designed to do ground-breaking science. It will be the largest and most sensitive radio telescope in the southern hemisphere until the Square Kilometre Array (SKA) is completed around 2024. Via MeerKAT, South Africa is playing a key role in design and technology developments for the SKA.

Close to 100 young scientists and engineers are working on the MeerKAT project. Based at the engineering office in Cape Town, and at universities and technology companies across South Africa and Africa, these researchers interact closely with SKA teams around the world. In collaboration with South African industry and universities, and collaborating with global institutions, the South African team has developed technologies and systems for the MeerKAT telescope, including innovative composite telescope dishes and cutting-edge signal processing hardware and algorithms.

Technical specifications for MeerKAT

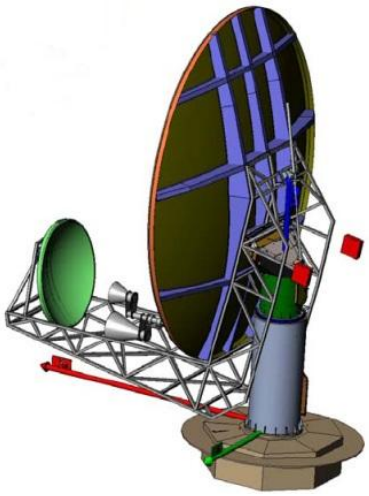
MeerKAT will consist of 64 dishes of 13.5m diameter each with an offset Gregorian configuration. An offset dish configuration has been chosen because its unblocked aperture provides uncompromised optical performance and sensitivity, excellent imaging quality, and good rejection of unwanted radio frequency interference from satellites and terrestrial transmitters. It also facilitates the installation of multiple receiver systems in the primary and secondary focal areas, and is the reference design for the mid-band SKA concept.

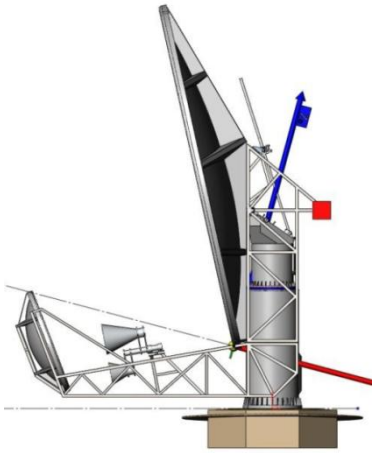
MeerKAT supports a wide range of observing modes, including deep continuum, polarisation and spectral line imaging, pulsar timing, and transient searches. A range of standard data products are provided, including an imaging pipeline. A number of "data spigots" are also available to support user-provided instrumentation. Significant design and qualification efforts are planned to ensure high reliability in order to achieve low operational cost and high availability.

MeerKAT: Specifications for array, antennae and receivers

Number of antennas	64
Dish diameter	13.5 m
Minimum baseline	29m
Maximum baseline	20km
Frequency bands (receivers)	0.58 – 1.015GHz 1 – 1.75GHz 8 – 14.5GHz
Continuum imaging dynamic range at 1.4GHz	60 dB
Line-to-line dynamic range at 1.4GHz	40 dB
Mosaicing imaging dynamic range at 14 GHz	27dB
Linear polarisation cross coupling across -3dB beam	-30dB

Structural layout of MeerKAT dish (left) and elevation angle where highest gravity-induced feed and sub-reflector displacements are recorded (right).





Configuration of the MeerKAT array

MeerKAT's 64 dishes will be distributed over two components:

- A dense inner component containing 70% of the dishes. These are distributed in a two-dimensional fashion with a Gaussian uv-distribution with a dispersion of 300 m; a shortest baseline of 29 m and a longest baseline of 1 km.
- An outer component containing 30% of the dishes. These are also distributed resulting in a two-dimensional Gaussian uv-distribution with a dispersion of 2 500 m and a longest baseline of 8 km.

For Phase 2, seven additional antennas will be added to extend the longest baselines to about 20 km.

MeerKAT construction phases

The KAT-7 precursor array has been constructed and is being used as an engineering and science prototype. MeerKAT itself will be delivered in three phases. The commissioning of MeerKAT will take place in 2014 and 2015, with the array coming online for science operations in 2016. This phase will include all antennas, but only the first receiver will be fitted, and a processing bandwidth of 750MHz will be available. For the second and third phases, the remaining two receivers will be fitted and the processing bandwidth will be increased to at least 2GHz, with a goal of 4GHz.

MeerKAT phasing schedule

	2011	2016	2018
	Precursor (KAT-7)	MeerKAT Phase 1	MeerKAT Phase 2& 3
Number of dishes	7	64	64
Receiver bands (GHz)	0.9 - 1.6	1.00 – 1.75	0.58 – 1.015 1.00 – 1.75 8 – 14.5
Max processed BW (GHz)	0.256	0.75	2 (goal 4)
Max baseline (km)	0.2	8	20
Min baseline (m)	20	29	29

MeerKAT science

Five years of observing time on MeerKAT have been allocated to leading radio astronomers who have applied for time to do research with this unique and world-leading instrument. The science objectives of the MeerKAT surveys are in line with the prime science drivers for the first phase of the SKA telescope itself, confirming MeerKAT's designation as an SKA precursor instrument.

MeerKAT science projects	**Research leaders**
Testing Einstein's theory of gravity and gravitational radiation - Investigating the physics of enigmatic neutron stars through observations of pulsars.	Professor Matthew Bailes, Swinburne Centre for Astrophysics and Supercomputing, Australia
LADUMA (Looking at the Distant Universe with the MeerKAT Array) - An ultra-deep survey of neutral hydrogen gas in the early universe.	Dr Sarah Blyth, University of Cape Town in South Africa; Dr Benne Holwerda, European Space Agency, The Netherlands; Dr Andrew Baker, Rutgers University, United States
MESMER (MeerKAT Search for Molecules in the Epoch of Re-ionisation) - Searching for CO	Dr Ian Heywood, Oxford University, UK

at high red-shift (z>7) to investigate the role of molecular hydrogen in the early universe.	
MeerKAT Absorption Line Survey for atomic hydrogen and OH lines in absorption against distant continuum sources (OH line ratios may give clues about changes in the fundamental constants in the early universe).	Dr Neeraj Gupta, ASTRON, The Netherlands; Dr Raghunathan Srianand, Inter-University Centre for Astronomy and Astrophysics, India
MHONGOOSE (MeerKAT HI Observations of Nearby Galactic Objects: Observing Southern Emitters) - Investigations of different types of galaxies; dark matter and the cosmic web.	Professor Erwin de Blok, University of Cape Town, South Africa
TRAPUM (Transients and Pulsars with MeerKAT) - Searching for, and investigating new and exotic pulsars.	Dr Benjamin Stappers, Joddrell Bank Centre for Astrophysics, UK; Professor Michael Kramer, Max Planck Institute for Radio Astronomy, Germany
A MeerKAT HI Survey of the Fornax Cluster (Galaxy formation and evolution in the cluster environment).	Dr Paolo Serra, ASTRON, The Netherlands
MeerGAL (MeerKAT High Frequency Galactic Plane Survey) - Galactic structure and dynamics, distribution of ionised gas, recombination lines, interstellar molecular gas and masers.	Dr Mark Thompson, University of Hertfordshire, UK; Dr Sharmilla Goedhart, South African SKA Project
MIGHTEE (MeerKAT International GigaHertz Tiered Extragalactic Exploration Survey) - Deep continuum observations of the earliest radio galaxies	Dr Kurt van der Heyden, University of Cape Town; Matt Jarvis, University of the Western Cape, South Africa and the University of Hertfordshire, UK
ThunderKAT (The Hunt for Dynamic and Explosive Radio Transients with MeerKAT) - eg gamma ray bursts, novae and supernovae, plus new types of transient radio sources.	Professor Patrick Woudt, University of Cape Town, South Africa; Professor Rob Fender, University of Southampton, UK

MeerKAT will also participate in global VLBI operations with all major radio astronomy observatories around the world and will add considerably to the sensitivity of the global VLBI network, and enhance the southern VLBI arrays. Further potential science objectives for MeerKAT are to participate in the search for extra-terrestrial intelligence, and collaborate with NASA on downloading information from space probes.

Marina Joubert

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Opportunities

FROM RESEARCH PAPERS TO NEWSPAPERS

You may be interested in this guide published on scidev.net recently: From research papers to newspapers: Practical advice on how scientists can make the leap from writing scientific papers to popular science, and reach a much wider audience. Find it here:

http://www.scidev.net/en/practical-guides/how-to-write-about-your-science.html

(written by me, but with help from several wonderful people).

Marina Joubert

SOUTHERN SCIENCE

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Nuffield Foundation Opportunities for Africa

The Africa Programme supports the development of research and professional expertise required for African countries to grow their economies and deliver health, education and other services.

Nuffield African Programme funds UK and African universities and/or NGOs working in partnership, often together with African government departments or quasi-government bodies such as training and research institutions, to develop training initiatives in science, technology and public service provision.

We also initiate funding collaborations with other foundations to support larger schemes to increase African research capacity.

If you are interested in applying you should see whether your project is eligible and then follow the application process

TWAS Fellowships: 2011 Call for Applications

Postgraduate, postdoctoral, visiting scholar and advanced research fellowships available to scientists from developing countries.

TWAS, the academy of sciences for the developing world, is now accepting applications for its postgraduate, postdoctoral, visiting scholars and advanced research fellowship programmes.

The fellowships are offered to scientists from developing countries and are tenable at centres of excellence in various countries in the South, including Brazil, China, India, Kenya, Malaysia, Mexico, Pakistan and Thailand.

Eligible fields include: agricultural and biological sciences, medical and health sciences, chemistry, engineering, astronomy, space and earth sciences, mathematics and physics.

Please see www.twas.org > Programmes > Exchange > Fellowships

(http://twas.ictp.it/prog/exchange/fells/fells-overview) for the latest information regarding all these programmes, including eligibility criteria, deadlines, etc, and to download the application forms and guidelines.

Women scientists are especially encouraged to apply.

Upcoming Conferences & Schools

Invitation: Mobility and FP7 Proposal Writing Workshops

Mobility and FP7 Proposal Writing Workshops

The Department of Science and Technology is organising Mobility and FP7 proposal writing workshops to be held in Pretoria, Cape Town and Durban.

28 June 2011: Pretoria

DST Building 53, CSIR Campus, Meiring Naude Road, Brummeria

29 June 2011: Cape Town

University of Cape Town, Lecture Theater 1, Eco Building, Middle Campus

30 June 2011: Durban

University of KwaZulu-Natal, Westville Campus, Research Office, Govan Mbeki Centre,

Conference Room 3

The mobility proposal training will be provided by Frank Marx, Acting Head of Unit: International Fellowships, Research Executive Agency (REA). REA is a funding body created by the European Commission to foster excellence in research and innovation. The agency manages large parts of the European Union (EU) Seventh Framework Programme (FP7) for Research, Technological Development and Demonstration Activities such as the People Programme.

The training will be free of charge. DST will not be providing any funding or assist with logistical and travel arrangement for participants.

Visit www.esastap.org.za to register and view the draft programme.

SAIP 2011 Annual Conference

56th Annual Conference of the SAIP

The Department of Physics at the University of South Africa (UNISA) invites you to the annual SAIP conference during the winter of 2011. Participants will be warmly welcomed to SAIP 2011, where we will provide a platform for sharing the latest developments in Physics.

Date: 12-15 July 2011
Venue: St Georges Hotel and Convention Centre, Pretoria
Web address: http://indico.saip.org.za/conferenceDisplay.py?confId=7

South African Biophysics Initiative

By Dr Ramond Sparrow

We would like to bring your attention two biophysics sessions at this year's SAIP annual conference.

1. Workshop on Biophysics 12 July 2011
2. Biophysics focused papers/talks – Applied Physics 13-15 July

Background

In assessing the needs of our country and current physics education SAIP identified a challenge posed by the poor state of biophysics education and research in South Africa. In order to strengthen Biophysics in South Africa, SAIP established the South African Biophysics Initiative Working Group.

Workshop on Biophysics 12 July 2011

The workshop has the following aims

- To stimulate awareness of Biophysics in South Africa
- To bring together individuals who can contribute and develop the biophysics discipline.
- To plan and co-ordinate the growth of Biophysics into the main stream scientific arena and funding streams within South Africa

The workshop will also have plenary talks on Bio-energetics, Photosynthesis, Neutral networks, Computational modelling and Structural biology.

Click here to register for biophysics workshop 12 July 2011

For more information contact

Dr Raymond Sparrow
CSIR: Biosciences Tel: +27 12 841 4149 E-mail: rsparrow@csir.co.z

3rd FUTO International Conference on Renewable Energy 7 – 11 August 2011

The Renewable and Alternative Energy Society of Nigeria, RAESON, in conjunction with the Renewable and Alternative Energy Research Group, RAERG, of the Federal University of Technology, Owerri (FUTO) is hosting the 3rd FUTO International Conference on Renewable and Alternative Energy and the 2nd Annual conference of the Renewable and Alternative Energy Society of Nigeria. The conference tagged FUTO Alternative Energy 2011 has its theme as: Renewable Energy for National Industrial Growth. It is scheduled to hold from 7th to 11th August, 2011.

The conference provides a platform for scientists, engineers, technologists, bureaucrats, policy makers and politicians to interact, share and exchange ideas, knowledge and research information, form collaborations and explore the potentials of modern technology in solving the global energy challenges.

For more information please download the conference flyer at
http://www.futo.edu.ng/Conference%20flier.pdf

6th Science Centre World Congress 4- 8 Sept 2011

The 6th Science Centre World Congress will be held in Cape Town, South Africa, 4-8 September 2011. Enjoy stimulating congress sessions, challenging workshops and lively debates. And enjoy all that Cape Town and South Africa have to offer - whale watching, wine tasting, a unique floral kingdom, big game safaris, beautiful beaches, unparalleled scenic beauty, and a friendly and diverse culture. For more information visit http://www.6scwc.org/index.php

CPS 8th International School of Planetary Sciences, will take place in Japan, from 26 September to 1 October 2011.

First Circular https://www.cps-jp.org/~pschool/pub/2011-09-26/index.html

Communicating Astronomy with the Public 2011 (CAP 2011)

Registrations are now open for the Communicating Astronomy with the Public 2011 Conference (CAP 2011), which this year takes place between 10 and 14 October at the Xiyuan Hotel in Beijing, China.

The 2011 Communicating Astronomy with the Public conference will focus on how to bring science to the people of today and tomorrow. With online platforms boosting with popularity and traffic, there is a whole world building up in the social media and the overall online territory, a world where individuals become opinion leaders by owning and sharing information. We need to embrace this revolution in communication.

At the same time, the IAU has started the implementation of the decadal plan entitled "Astronomy for the Developing World". This plan, built on the legacy of IYA2009, brings new opportunities and challenges for communicating astronomy across the globe, with emphasis on the developing world.

For more details please visit: http://www.communicatingastronomy.org/cap2011/index.html

WIPO-South Africa Summer School on Intellectual Property

Cape Town, South Africa, November 28 to December 9, 2011

The World Intellectual Property Organization (WIPO) based in Geneva, Switzerland, will offer jointly with the Department of Science and Technology of the Republic of South Africa, a two-week Summer School on Intellectual Property (Summer School), from November 28 to December 9, 2011. The Summer School offers an invaluable education program in the whole area of intellectual property (IP).

Fifty places will be made available. Selected applicants will be notified one week after the registration deadline, for details please check

http://www.wipo.int/academy/en/courses/summer_school_southafrica/index.html

2011 SOUTH AFRICAN STUDENTS SUMMER PRACTICE Dubna(Russia)

Dr N. Jacobs: **noel@ma2.sun.ac.za** ***and Prof L. Lekala:*** **lekalml@unisa.ac.za**

Students in consultation with their supervisors, departmental heads or study leaders must choose and indicate a project of interest from a list of topics provided in the link below.
http://newuc.jinr.ru/events.asp?id=35&act=start
Email to Dr N. Jacobs: **noel@ma2.sun.ac.za** ***or Prof L. Lekala:*** **lekalml@unisa.ac.za**

Deadline for submissions for the September 2011 issue of Physics Comment is 31 August 2011.

Physics Comment Editorial Policy

Physics Comment is an electronic magazine for the Physics community of South Africa, providing objective coverage of the activities of people and associations active in the physics arena. It also covers physics-related ideas, issues, developments and controversies, serving as a forum for discussion. It is not a peer review journal.

Physics Comment publishes innovative reports, features, news, reviews, and other material, which explore and promote the many facets of physics. Physics Comment endeavours to:

- support and inform the physics community
- promote membership of the South African Institute of Physics
- promote the understanding of physics to interested parties and the general public
- represent the readers' point of view
- focus on issues and topics of importance and of interest to the physics community

We accept submissions on any physics-related subject, which endeavours to inform readers and to encourage writers in their own researches. We aim to be politically, socially and geographically inclusive in the articles, which we commission and receive. Therefore we shall not discriminate according to political or religious views. Physics Comment does not support or endorse any individual politician or political party. However, contributions, which are being published, may contain personal opinions of the authors.

It is our desire to present unfettered the opinions and research of our readers and contributors. All articles submitted for publication are subject to editorial revision. Such revisions, if necessary, will be made in cooperation with the author.

The views expressed in published articles are those of the authors and are not attributed to the Editorial

The Editor will make the final determination of the suitability of the articles for publication.

Declaration by Author

When an author submits material for publication, this means:

1. The author(s) assures the material is original, his/her own work and is not under any legal restriction for publication online (e.g., previous copyright ownership).
2. The author allows PC to edit the work for clarity, presentation, including making appropriate hypermedia links within the work.
3. The author gives PC permission to publish the work and make it accessible in the Magazine's archives indefinitely after publication. The author may retain all other rights by requesting a copyright statement be placed on the work.

Authors should respect intellectual integrity by accrediting the author of any published work, which is being quoted.

Publication Deadlines

Physics Comment is published four times a year.

Issue	Closing Date	Publication Date
Issue 1	28 February	15 March
Issue 2	31 May	15 June
Issue 3	31 August	15 September
Issue 4	30 November	15 December

Specification and Submission of Content

Editorial Tone. As the voice of the physics community, the magazine will create a provocative, stimulating, and thoughtful dialogue with the readers; and provide a variety of perspectives that reflects the dynamism of the physics community.

Article types. The magazine is devoted to articles, reports, interesting facts, announcements and recent developments in several areas related to physics:

Manuscripts. Solicited manuscripts will be judged first for reader interest, accuracy and writing quality. The editor reserves the right to request rewrite, reject, and/or edit for length, organization, sense, grammar, and punctuation.

Re-use. The publisher reserves the right to reuse the printed piece in full or in part in other publications.

Submission and Format. Manuscripts must be submitted to the editor on or before the designated due date Manuscripts must be submitted electronically, on the prescribed Microsoft Word template available for download from http://www.saip.org.za/PhysicsComment/. Manuscripts are to be submitted directly to the editor: PhysicsComment@saip.org.za.

Style. AP style is followed for punctuation, capitalization, italics and quotations.

Photography and Illustration. All solicited photography and illustration should be part of an article and will be judged first for technical quality and editorial appropriateness. The editor and art director reserve the right to request revision or reject any material that does not meet their criteria. The publisher reserves full rights to all solicited photography and illustration, including the right to reprint or reuse graphic material in other publications.

Categories of Content Contributions

Technical articles and reports: These are generic articles of about 1 500 words plus diagrams and pictures. A technical article covers a relevant feature topic. Articles are authored by the writer and publishing a 40-word resume of the author could enhance its credibility. By submitting an article that has been previously published the author confirms that he/she has the right to do so, and that all the necessary permissions have been received. Acknowledgement must be made within the article.

News: These are short editorial items usually not more than 250 words. Full colour pictures must be clearly referenced on the editorial submission and on the picture or picture file.

Advertorials: Advertorials could be published when supplied by the client. We recommend a maximum of 500 words plus one or two pictures for maximum impact. A PDF file of the laid out advertorial should be emailed by the client along with an MS Word file of the text and separate image files of the pictures. It is the client's responsibility to ensure that the advertorial is correct as it is in fact a paid for advert page.

Letters to the Editor: Letters to the Editor are encouraged. The Editor reserves the right to edit for length and format. The Editor will not change the political position of the initial letter. Physics Comment does not publish anonymous letters.

Advertising Policy: The Editorial Board will determine advertising prices for Physics Comment, subject to approval by SAIP Council. The objective will be to obtain revenue to maintain and develop the magazine. Physics Comment offers classified advertising to subscribers of the magazine for free. The advertisements must be a maximum of 60 words including the telephone number, and there is a limit of three free classifieds per subscriber, per issue. Advertisements may include a photo, which may be reduced in size or resolution by the editor to optimize loading time. All items or opportunities, which are being advertised for free, should be physics-related. The Editor reserves the right to refuse any advertising, which does not conform to the objectives of the magazine.

Submission of Articles

All articles must be submitted on the prescribed template available for download from http://www.saip.org.za/PhysicsComment/