Radiation Safety Information Computational Center

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I don't like to lose, and that isn't so much because it is just a football game, but because defeat means the failure to reach your objective.—Knute Rockne

Computational Medical Physics Working Group Holds First Planning Workshop

The Nuclear Science and Technology Division (NSTD) of Oak Ridge National Laboratory (ORNL) sponsored the first workshop of the newly formed Computational Medical Physics Working Group (CMPWG) on October 26, 2005. The CMPWG was formed in November 2004 within the American Nuclear Society (ANS) and is jointly hosted by three ANS divisions – Mathematics and Computations, Biology and Medicine, and Radiation Protection and Shielding. It is an international group dedicated to the validation and advancement of computational tools in medical and health physics applications (http://cmpwg.ans.org).

The workshop was held to address several key areas:

- identify the medical physics problems and experiments for computational benchmarks,
- identify the software tools, their applications, strengths and weaknesses,
- identify applications suitable for parallel computing, and
- identify the roadmap for benchmarking activities.

Discussions centered on the need for experimental data, the importance of both Monte Carlo and deterministic methods, and the need to evaluate current nuclear data for medical physics. These activities are aimed at improving dose predictions for radiation therapy and other medical activities that utilize ionizing radiation.

CMPWG consists of individuals from the American Nuclear Society (ANS), American Association of Physicists in Medicine (AAPM), and Health Physics Society (HPS).

The following institutions were represented at the workshop.

- Georgia Institute of Technology,
- University of Florida,
- Idaho State University,
- Louisiana State University,

- University of Wisconsin,
- Tufts University – New England Medical Center,
- University of Tennessee Medical Center,
- University of Texas – M.D. Anderson Cancer Center,
- Oak Ridge National Laboratory,
- Idaho National Laboratory, and
- Los Alamos National Laboratory,

among others. If you have interest in the area, we invite you to join us.

Contact: B.L. Kirk (kirkbl@ornl.gov)

IAEA and Director Awarded 2005 Nobel Peace Prize

Oslo, 7 October 2005—The Norwegian Nobel Committee has decided that the Nobel Peace Prize for 2005 is to be shared, in two equal parts, between the International Atomic Energy Agency (IAEA) and its Director General, Mohamed ElBaradei, for their efforts to prevent nuclear energy from being used for military purposes and to ensure that nuclear energy for peaceful purposes is used in the safest possible way.

At a time when the threat of nuclear arms is again increasing, the Norwegian Nobel Committee wishes to underline that this threat must be met through the broadest possible international cooperation. This principle finds its clearest expression today in the work of the IAEA and its Director General. In the nuclear non-proliferation regime, it is the IAEA [that ensures] that nuclear energy is not misused for military purposes, and the Director General has stood out as an unafraid advocate of new measures to strengthen that regime. At a time when disarmament efforts appear deadlocked, when there is a danger that nuclear arms will spread both to states and to terrorist groups, and when nuclear power again appears to be playing an increasingly significant role, IAEA´s work is of incalculable importance.

In his will, Alfred Nobel wrote that the Peace Prize should, among other criteria, be awarded to whoever had done most for the "abolition or reduction of standing armies." In its application of this criterion in recent decades, the Norwegian Nobel Committee has concentrated on the struggle to diminish the significance of nuclear arms in international politics, with a view to their abolition. That the world has achieved little in this respect makes active opposition to nuclear arms all the more important today.

http://nobelprize.org/peace/laureates/2005/press.html

IAEA Director General Dr. Mohamed ElBaradei Statement on Occasion of Receipt of the Nobel Peace Prize 2005

The following is an excerpt from a telephone interview with Mohamed ElBaradei after the announcement of the 2005 Nobel Peace Prize, October 7, 2005. The interviewer is Marika Griehsel, a freelance journalist.

Marika …And what is the feeling among the staff?

ElBaradei – Well, I think the staff are bursting with pride. In a way it just gives recognition to the hard work they do, night and day – in the field, working with governments, against governments, trying to control nuclear material, possible nuclear terrorism – in the four corners of the globe. … ... And I'm very gratified that the Prize recognises, not just me, but equally every member of the staff. And that's absolutely the right way to go, I think, in my view. Because, without the staff, we would not have been where we are.

M– How do you think the organisation and you in person will be able to use the award in furthering the IAEA's work?

E– Well, I think it will absolutely give us the encouragement, the support, particularly public support, Marika, and the added recognition, or status if you like, to go through the difficult road we are travelling – which is to make sure that nuclear weapons would not proliferate, that we control the already existing 50,000 warheads and hopefully move towards nuclear disarmament, that we make sure that nuclear terrorists will not acquire nuclear material ... So it has very much strengthened my resolve – that I now know that the public at large are supporting our mission, recognising the importance of the mission, and it's in fact an added responsibility on my shoulders to deliver and to meet the expectations of the Nobel Committee.

http://nobelprize.org/peace/laureates/2005/elbaradei-telephone.html

What do I feel at this occasion? Gratitude, pride, and hope.

Gratitude: With this recognition, the Norwegian Nobel Committee underscores the value and the relevance of the work we have been doing. It recognizes the urgency of addressing the dangers we face: nuclear proliferation, nuclear armaments, and nuclear terrorism. The award will lend prominence and impetus to the IAEA's ultimate objective—of passing to our children a world free of nuclear weapons—and for that I am deeply grateful.

Pride: It is at once humbling to receive such an extraordinary honour, and an occasion for me to take great pride in all the men and women who serve at the International Atomic Energy Agency. This is an acknowledgement of their untiring efforts in the service of peace - efforts that the Prize Committee has characterized as being "of incalculable importance."

- ❖ The IAEA was founded with a simple credo: "Atoms for Peace"—meaning that nuclear science should be used safely and securely in the service of humankind - in peaceful applications related to energy production, health, water, agriculture and other aspects of development—and not for its destruction. More than anything, this award suggests that, almost five decades later, we are still focused unwaveringly on living up to that objective.

Hope: It has long been my belief that the road to international peace and security lies through multilateralism—the collective search by people of all racial, religious, ethnic and national backgrounds to find a common ground, based not on intimidation or rivalry but on understanding and human solidarity.

- ❖ In a practical sense, this means developing a functional system of international security that does not derive from a nuclear weapons deterrent—but rather based on addressing the security concerns of all.
- ❖ Ultimately, the news I have just received - that we are being awarded the Nobel Peace Prize—gives me renewed hope that, working in concert, the international community can achieve this goal. It strengthens my resolve to fulfil both aspects of the Agency´s mandate: ensuring that the benefits of nuclear energy are distributed as broadly as possible in the service of humankind, and working towards a world free of nuclear weapons.

http://www.iaea.org/NewsCenter/Statements/2005/ebsp2005n012.html

RSICC CONGRATULATES IAEA

The International Atomic Energy Agency (IAEA), founded with the credo: "Atoms for Peace"—meaning that nuclear science should be used safely and securely in the service of mankind—has been acknowledged five decades later for its efforts in the service of peace by the Nobel Peace Prize Committee, shared jointly with the present Director General, Mohamed ElBaradei. The Agency, known for its urgency in addressing the dangers of nuclear proliferation, nuclear armaments, and nuclear terrorism, is also known for advancing nuclear science for its peaceful applications—those related to energy production, health, water, agriculture, and other aspects related to human betterment.

The IAEA is an important channel for communicating and exchanging nuclear information and technology related to nuclear safety across national and other political boundaries. As the European OECD offered channels for interaction with the European nuclear community for information and technology exchange in nuclear safety areas, so did the IAEA for the non-OECD countries. The Radiation Shielding Information Center (RSIC) was successful in advancing technology in radiation transport and shielding due to the cooperation and exchange of personnel, technology, and data, through channels provided by the OECD Nuclear Energy Data and Computer Code Centers (NEDAC) and the IAEA Nuclear Data Center (INDC) and working groups sponsored by each.

The orientation visits and exchange of data and personnel were important in the early development of RSIC. Interaction with both OECD and IAEA began in the 1960s and continued through the years. An RSIC staff

member, Henrietta Hendrickson, spent useful time in the IAEA Nuclear Data Center in the early 1980s and several INDC and NEDAC staff members spent time in RSIC. The evolved Radiation Safety and Computational Information Center (RSICC) continues to find international interaction of great value.

We applaud the Norwegian Nobel Committee on its wisdom for conveying the 2005 Nobel Peace Prize on the IAEA. It is a well earned honor for the efforts of many IAEA staff members who have served the cause of peace while they promoted the benefits of nuclear energy for the betterment of the people of the earth.

-Betty F. Maskewitz

Changes to the Computer Code and Data Collection

CCC-707/PARTISN 4.00

Los Alamos National Laboratory, Los Alamos, New Mexico, contributed a newly frozen version of this code system to solve the linear Boltzmann transport equation for neutral particles using the deterministic (S_N) method. PARTISN (PARallel, TIme-Dependent SN) solves both the static (fixed source or eigenvalue) and time-dependent forms of the transport equation in forward or adjoint mode. Vacuum, reflective, periodic, white, or inhomogeneous boundary conditions are solved. General anisotropic scattering and inhomogeneous sources are permitted. PARTISN solves the transport equation on orthogonal (single level or block-structured AMR) grids in 1-D (slab, two-angle slab, cylindrical, or spherical), 2-D (X-Y, R-Z, or R-T) and 3-D (X-Y-Z or R-Z-T) geometries.

PARTISN is the evolutionary successor to CCC-547/DANTSYS. User input and cross section format is very similar to that of the DANTSYS code. PARTISN accepts basic multigroup cross sections for isotopes, in either of the standard interface files (ISOTXS or GRUPXS) or in a card-image library whose form is referred to as Los Alamos, ANISN, or FIDO. Standard interface files whose specifications have been defined by the Reactor Physics Committee on Computer Code Coordination are accepted, used, and created by the code. A free-field card-image input capability is provided for the user. The code provides the user with considerable flexibility in using both card-image or sequential file input and in controlling the execution of modules. Note that no cross section data are included in the package.

The program is written in ANSI standard F90 with a few C language routines used to interface to the operating system. No executables are included in the package, so compilers are required on all systems. PARTISN stresses most f90 compilers, so please ensure that the compiler version you are using is at least as recent as the one listed below on which the LANL developers ran the code system.

- Lahey-Fujitsu LF95 Fortran Compiler Version 6.20 on Intel PC running Linux
- Absoft 8.2 on Redhat Enterprise WS 3.0
- IBM XLF Fortran Compiler Version 7.1.0.3 on IBM RS/6000
- MIPSpro Fortran Compiler Version 7.3.1.3m on SGI
- Compaq Fortran Compiler V5.5.0-1 on Compaq Alpha under Digital Unix
- Cray J90 and T90 with CF90 Version 3.0.2.1
- Lahey-Fujitsu Fortran Compiler version 7.1 under Windows in a Cygwin environment

RSICC tested this release in serial mode on IBM RS/6000 under AIX 5.1 with XL Fortran 08.01.0000.0003 and on a Pentium IV running WindowsXP SP2 with Lahey/Fujitsu Fortran 95 Compiler Release 7.10.02 and in parallel and serial modes on AMD Athlon with Lahey/Fujitsu Fortran 95 L6.10a under Red Hat Linux 7.3.

Parallelization is performed using MPI. The program is designed to run on UNIX-like operating systems. In addition to Fortran and C compilers, program building requires GNUmake (Version 3.74 or later), GNU awk (Version 3.0 or later), and cpp. The package is transmitted on a CD which includes

documentation, source files, installation procedures, and a test case in a Unix tar file. Reference: LA-UR-05-3925 (May 2005). Fortran 90 and C; IBM, SGI, Alpha, Cray and PC - Linux and Windows (C00707MNYCP01).

PSR-522/TRUMP

Battelle Columbus Laboratory, Columbus, Ohio, contributed a PC version of this code system to calculate transient and steady state temperature distribution in multidimensional systems. TRUMP solves a general nonlinear parabolic partial differential equation describing flow in various kinds of potential fields, such as fields of temperature, pressure, or electricity and magnetism. Simultaneously, it will solve two additional equations representing, in thermal problems, heat production by decomposition of two reactants having rate constants with a general Arrhenius temperature dependence. In this revision, no major changes were made to the code other than those required to compile on a personal computer. The PC executable included in the package was created using Lahey/Fujitsu Fortran 95 Release 5.70C under WindowsXP. RSICC compiled and tested TRUMP-PC on a on a Dell Pentium IV 2.8 GHz running Windows XP SP 2. TRUMP was developed in the 1970s at Livermore National Laboratory on a CDC 7600. It was converted to run under OS/360 on IBM360 and under OS/370 on IBM370. These older versions are retained in the package for archival purposes. The package is transmitted on a CD in compressed Windows files. Fortran source files and PC executables are included. Reference: UCRL 14754 Rev. 3 (September 1, 1972). Fortran IV.

SCALE 5 Error Notification for Slab Cells

An error was identified in SCALE 5 that may impact certain type of unit cells, specifically asymmetric and symmetric slab cells (ASYMSLABCELL and SYMMSLABCELL). Users are encouraged to read more about the problem and to follow the checklist in the links below to determine if the error applies to their problems and if the potential impact is non-trivial.

More info: http://rsicc.ornl.gov/rsic-cgi-bin/enote.pl?nb=scale5&action=view&page=84

Official notice and checklist: http://rsicc.ornl.gov/rsic-cgi-bin/enote.pl?nb=scale5&action=view&page=-1

In SCALE 5, the LATTICECELL input format was changed to use keywords. As part of these changes, errors were introduced in the calculation of dimensions for asymmetric and symmetric slab cells. These programming errors in the Materials Information Processor (MIPLIB) cause an inaccurate Dancoff factor calculation from a SCALE 5 control sequence and will cause errors in the predicted k-eff value that uses the Dancoff factor. The error only occurs for control sequence input files that use the ASYMSLABCELL or SYMMSLABCELL option and the new SCALE 5 input format (keywords “READ COMP”). Please follow the links above for additional information.

News to Note

Diaz Inducted into HENAAC Hall of Fame

NRC Chairman, **Nils J. Diaz**, was inducted into the Hispanic Engineer National Achievement Awards Conference (HENAAC) Hall of Fame during a ceremony on October 7 at the 17th Annual HENAAC Conference in Anaheim, California. The HENAAC Hall of Fame was established in 1998 to recognize Hispanic engineers, scientists, and technology professionals who achieve excellence.

Dr. Diaz holds a Ph.D. and M.S. in Nuclear Engineering Sciences from the University of Florida. He practiced nuclear medicine and health physics and was licensed as a Senior Reactor Operator for 12 years by the NRC. He is a Fellow of the American Nuclear Society, the American Society of Mechanical

Engineers, and the American Association for the Advancement of Science. Prior to his appointment as Commissioner with the U.S. Nuclear Regulatory Commission (NRC) in 1996, Dr. Diaz was Professor of Nuclear Engineering Sciences at the University of Florida, Director of the Innovative Nuclear Space Power Institute (INSPI)—a national consortium of industries, universities and national laboratories—and President and Principal Engineer of Florida Nuclear Associates, Inc. Dr. Diaz' career includes 11 years as Director of INSPI for the Ballistic Missile Defense Organization/Department of Defense, two years in California as Associate Dean for Research at the California State University Long Beach, one year in Spain as Principal Advisor to Spain's Nuclear Regulatory Commission, and six years at nuclear utilities and vendors. From 1971 to 1996, Dr. Diaz consulted on nuclear engineering and energetics to private industry, the U.S. government and several foreign governments.

Dr. Diaz was serving a second five-year term at the NRC when he was designated as Chairman of the Nuclear Regulatory Commission by President George W. Bush on April 1, 2003.

Obituaries

William Lowndes McLaughlin, 77, research scientist and teacher, died October 26, 2005, at his home in Lexington, Virginia. McLaughlin was a physicist at the National Institute of Standards and Technology (NIST) in Gaithersburg, Maryland, and adjunct professor at the University of Maryland. He was an authority on methods of measuring radiation doses for processing and protection, and he is known world-wide as the father of radiochromic-dye dosimetry. The measurement systems he developed are still used around the world. He traveled widely on scientific missions and mentored countless younger scientists from many countries. After his 1996 retirement, he was named an NIST Fellow. In 2003 NIST sponsored a three-day symposium in his honor where colleagues from around the world delivered scholarly papers based on his work. He graduated from Potomac State University and from Hampden-Sydney College in 1949. In 1950–51 he was a Rotary International Fellow at Tübingen University in Germany. From 1954 to 1956 he was with the U.S. Army Signal Corps on Enewetok and Bikini islands measuring radiation at the atomic-bomb test sites.

From 1973–1991, he was an advisor to the Accelerator and Environmental Science Departments, Risø National Laboratory, Denmark, and from1991–1995 to the Dosimetry Section of the International Atomic Energy Agency.

William McLaughlin's honors include the U.S. Department of Commerce's Silver Medal (1969) and Gold Medal (1979); the National Bureau of Standard's Applied Research Award (1985); the American Nuclear Society Radiation Science and Technology Award (1987); and the Elsevier Science Journal of Applied Radiation and Isotopes Gold Medal (1995). He received the Research and Development 100 Award three times in his career. In 1999, the Washington Academy of Sciences honored him for "outstanding achievement in the physical sciences." He was a member of the American Nuclear Society, the American Physical Society, the Optical Society of America, the Health Physics Society, and Cosmos Club in Washington.

He was the lead author of two key books in his field, *Dosimetry for Food Irradiation*, and *Dosimetry for Radiation Processing*, as well as chapter contributions to several other books. He was an editor of numerous other volumes and of the *International Journal of Applied Radiation and Isotopes* (1989-1999).

Paul V. Harper died July 15 in Evanston, Illinois; he was 89. Harper received his undergraduate and medical degrees from Harvard University and trained in surgery at the University of Chicago where he became assistant professor of surgery in 1953. A pioneer in nuclear medicine, he first implanted radioactive materials in patients to treat inoperable tumors in the 1950s. In 1961 he devised an efficient method of producing iodine-125 which is used to scan the liver and thyroid. He led the University of Chicago team that developed technetium-99m, an isotope still used to pinpoint and diagnose cancers.

Ira L. Morgan died at the age of 78 on June 30 in Austin, Texas. He was a fellow of the ANS and a member since 1960. He was a World War II veteran of the Naval Air Corps. He earned his master's degree from Texas Christian University and doctorate in physics and mathematics from the University of Texas. He worked on the University's first high-voltage accelerator, known as the "atom-smasher" at the Balcones Research Center as assistant director of the Nuclear Physics Research Laboratory. He was professor of physics and director of the Center for Nuclear Studies at UT from 1966–1976. He served as adjunct professor and assistant to the vice president of research at the University of North Texas from 1987–1997. During his career he established several businesses: Texas Nuclear Corporation, Columbia Scientific Industries, Scientific Measurement Systems, Integrated Digital Modeling Corp. and Advanced Molecular Imaging Systems.

Joseph Rotblat was 96 when he died on August 31 in London. He was a physicist educated at the University of Warsaw where he earned a master's and doctorate in physics. He won a research fellowship to Liverpool University where he studied under James Chadwick, who had discovered the neutron. Along with Chadwick, Rotblat became a member of the British team working on the Manhattan Project. He left nine months later over misgivings about developing an atomic bomb. In 1957 he helped found the Pugwash Conferences on Science and World Affairs in Pugwash, Nova Scotia, to promote nuclear disarmament; he received the Nobel Peace prize in 1995 for his work with the Pugwash Conferences.

Rollin G. Taecker, former director of Argonne National Laboratory's International School of Nuclear Science and Engineering, died August 19 at the age of 86. He received his doctorate in chemical engineering from the University of Wisconsin-Madison and it was there that he developed an interest in nuclear engineering. He became a professor of chemical engineering at Kansas State University and in 1953 helped initiate President Dwight Eisenhower's "Atoms for Peace" program at Argonne. He was a fellow at the Saclay Nuclear Institute in France from 1962–1963 and served as chief of fellowships and training for the International Atomic Energy Agency from 1969–1971.

W. Kelly Woods, died August 4 at the age of 92. After receiving a doctorate in chemical engineering from the Massachusetts Institute of Technology, he joined the engineering department of DuPont in 1940. He later served as a technical advisor for the plutonium production reactors at the Hanford Site in Washington. After serving in WWII he spent 25 more years in the nuclear industry at General Electric. In 1972 he moved to Salem, Oregon, where he served for six years on the Oregon Energy Facility Siting Council and as a part-time lecturer in nuclear engineering at Oregon State University.

NRC to Recruit 350 New Employees

The U.S. Nuclear Regulatory Agency (NRC) has announced an aggressive recruiting campaign to deal with anticipated retirements and to bring up staffing levels to handle an expected rise in applications for new reactor licenses in 2007 and 2008. About 350 employees in both entry-level and higher positions will be added next year. NRC employment information and links to the NRCareers job application system can be found at http://www.nrc.gov/who-we-are/employment.html. For dates and details of other planned recruitment events, those interested should contact Jim Horn at 301-415-7703 or JEH2@nrc.gov.

UCNRE Position for Assistant/Associate Professor

The Nuclear & Radiological Engineering Program of the University of Cincinnati (UCNRE) invites applications for a tenure-track faculty position at the Assistant or Associate Professor level in the Department of Mechanical, Industrial and Nuclear Engineering. Screening of applicants will begin on January 1, 2006 and will continue until the position is filled. Details on this opportunity are available at the following website: http://www.eng.uc.edu/dept_min/positions/. Interested candidates should e-mail a resume, a brief statement of research, teaching, and service objectives, copies of two representative publications, and the names of three professional references to:

Dr. Henry Spitz, Search Committee Chair
Nuclear and Radiological Engineering Program
Mechanical, Industrial and Nuclear Engineering Department
Email: NREFacultySearch@uc.edu, phone: (513) 556-2003

CONFERENCES, COURSES, SYMPOSIA

RSICC attempts to keep its users and contributors advised of conferences, courses, and symposia in the field of radiation protection, transport, and shielding through this section of the newsletter. Should you be involved in the planning/organization of such events, feel free to send your announcements and calls for papers via email to riceaf@ornl.gov with "conferences" in the subject line by the 20th of each month. Please include the announcement in its native format as an attachment to the message. If the meeting is on a website, please include the url.

Every attempt is made to ensure that the links provided in the Conference and Calendar sections of this newsletter are correct and live. However, the very nature of the web creates the possibility that the links may become unavailable. In that case, please call or mail the contact provided.

MCNPX Workshops

Lead Teachers: Drs. John Hendricks, Gregg McKinney, Laurie Waters
Organizer: HQC Professional Services
Contact: bill@mcnpxworkshops.com
Information: http://mcnpxworkshops.com and MCNPX homepage: http://mcnpx.lanl.gov

2006 Schedule		
January 9–13	Introductory	Las Vegas, NV
March 27–31	Intermediate	Cape Town, South Africa
June 12–16	Introductory	Santa Fe, NM

MCNPX is packed with new and exciting plotting features, including numerous mesh tally options which can be superimposed on your geometry plot and plotted within the MCNPX run, eliminating the need for post-processing and costly additional plotting package(s). You can plot particle flux, tracks, dosage, and energy deposition as well as source points and many others.

The workshops include hands-on instruction, generally on PC Windows machines. Subject to participant export approval from the MCNPX beta test team, participants will be able to access the Fortran 90 version of MCNPX 2.4, the LA150 (150 MeV) cross-section data for over 40 isotopes for incident neutrons and protons and 12 for photonuclear interactions, and a notebook of viewgraphs.

Follow-up consultation for class participants will be provided.

The classes are taught by experienced MCNPX code developers and instructors. More information on code versions and capabilities is available at MCNPX Workshops web site http://mcnpxworkshops.com.

ANS RP&S Division Biennial Topical Meeting

The American Nuclear Society Radiation Protection and Shielding Division Biennial Topical Meeting will be held April 3–6, 2006, at the Pecos River Village in Carlsbad, New Mexico. The conference will open with a keynote address by Dr. Glenn Knoll. Other outstanding plenary speakers will include Dr. Kenneth Shultis, Dr. Cassiano de Oliveira and other special speakers.

Workshops will be offered on April 2 and 6, both morning and afternoon. These continuing education classes with the time and location are listed in the conference website.

There will be no charge to those registered for the conference for any of the workshops, although pre-registration is requested. Attendance at the conference will provide continuing education credits for various technical certifications depending on the degree of participation by the attendee.

Tours will be offered of the Waste Isolation Pilot Plant (WIPP), a licensed and operating deep geological repository for transuranic waste. The actual number of visitors WIPP can accommodate will depend on operational conditions and the work schedule of the facility. The WIPP site is a federal facility and advance notice will be required for a site visit so early registration is strongly encouraged.

The Trinity Site is also available to the general public independent of the conference on Saturday, April 1, 2006. The Trinity Site is the location of the world's first detonation of a nuclear weapon.

The call for papers, program and contact information for the conference can be found at http://www.ans-rpsw-carlsbad.com/.

TRAINING COURSE ON NEUTRON SPECTRA UNFOLDING

This two-day training course on neutron spectra unfolding will be held April 7–8, 2006, in Cape Town, South Africa. The training course is organized by the Neutron Radiation department of the Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany. Additional support is provided by EURADOS. The course is intended for those who do spectrometry in neutron or mixed neutron/photon fields and need to analyze their data using unfolding procedures; emphasis is on practical aspects of unfolding.

A series of lectures in the morning sessions will provide an introduction to unfolding as well as allow for discussions on the theory of unfolding. In the afternoon sessions participants will work on specific examples at PC-workplaces using the UMG software package provided by PTB (UMG: Unfolding with GRAVEL and MAXED, currently distributed by NEA as code package NEA-1665 and by RSICC as code package PSR-529). We will focus on Bonner sphere measurements for our discussion of few-channel unfolding, and on liquid scintillation spectrometer (NE213) measurements for our discussion of multi-channel unfolding.

The number of participants will be restricted due to the limited number of PC-workplaces available. Therefore, you should register as soon as possible. For on-line registration and further information please visit the website at: http://www.ptb.de/utc2006/. Contact: Burkhard Wiegel, PTB, email Burkhard.Wiegel@ptb.de The fee for the course is 800 Euro and includes a CD with a complete set of notes and unfolding software, as well as refreshments.

PRACTICAL MCNP FOR THE HP, MEDICAL PHYSICIST, AND RAD ENGINEER

DATES: 17–21 July 2006 (4.5 days)

FEE: $1,450 per person

PLACE: The MESA Complex, Room 130, University of New Mexico-Los Alamos Campus

Monte Carlo type calculations are ideally suited to solving a variety of problems in radiation protection and dosimetry. The Los Alamos MCNP™ code is a general and powerful Monte Carlo transport code for photons, neutrons, and electrons, and can be safely described as the "industry standard." This course is aimed at the HP, medical physicist, and rad engineer with no prior experience with Monte Carlo techniques. The focus is almost entirely on the application of MCNP™ to solve a variety of practical problems in radiation shielding and dosimetry. The intent is to "jump start" the student toward using MCNP™ productively. With a

little practice and study of the examples, many will find they are able to solve problems that have, in the past, been out of reach.

Course content: Extensive interactive practice sessions are conducted on a personal computer. Topics will include an overview of the MCNP™ code and the Monte Carlo method, input file preparation, geometry, source definition, standard MCNP tallies, interpretation of the output file, exposure and dose rate calculations, radiation shielding, photon skyshine, detector simulation and dosimetry. Students will be provided with a comprehensive class manual and a diskette containing all of the practice problems. This course has been granted 32 Continuing Education Credits by the AAHP (2005-00-003), and 4.5 CM points by the American Board of Industrial Hygiene. The course is offered by the Health Physics Measurements Group at the Los Alamos National Laboratory.

Registration is available online at: http://drambuie.lanl.gov/~esh4/mcnp.htm. Make checks (U.S. dollars on a U.S. bank) payable to the University of California and mail with name, address, and phone number to: David Seagraves, Mail Stop J573, Los Alamos National Laboratory, Group HSR-4, MCNP Class, Los Alamos, NM 87545.

Inquiries regarding registration and class space availability should be made to David Seagraves, 505-667-4959, fax: 505-665-7686, e-mail: dseagraves@lanl.gov. Technical questions may also be directed to Dick Olsher, 505-667-3364; e-mail: dick@lanl.gov.

Please note that this course is separate from and independent of the courses being offered by the MCNP and MCNPX Teams at LANL.

Richard H. Olsher

PHYSOR 2006

The Canadian Nuclear Society has announced that the ANS Reactor Physics Topical PHYSOR-2006, "Advances in Nuclear Analysis and Simulation," will be held in Vancouver, BC, Canada, Sept. 10–14, 2006. The meeting is sponsored by the Reactor Physics Division of the ANS and co-sponsored by a host of international societies. The conference will be held at the Hyatt Regency in downtown Vancouver.

You are invited to visit the meeting website at http://www.cns-snc.ca/physor2006/ to obtain updated information and to download a copy of the call for papers. The conference chair is Benjamin Rouben, FCNS Manager, Reactor Core Physics Branch, AECL Sheridan Park (phone 905-823-9060 x 4550, fax: 905-822-0567, email: roubenb@aecl.ca). The technical program co-chair is Ken Kozier, Atomic Energy of Canada Limited (AECL), Chalk River Laboratories, Chalk River, Ontario, Canada K0J 1J0 (Phone: +1-613-584-8811 + ext.5059, email: physor2006@aecl.ca).

ICNCT-12

The Twelfth International Congress on Neutron Capture Therapy (ICNCT-12) will be held October 9–13, 2006, in Takamatsu, Kagawa, Japan. The meeting is sponsored by the International Society for Neutron Capture Therapy (ISNCT) with the society president, Yoshinobu Nakagawa of the Kagawa National Children's Hospital, acting as chairman of the organizing committee. The meeting will focus on the many significant developments that have been made in neutron capture therapy in biology, medicine, chemistry, medical physics and engineering, and clinical trials. The most up-to-date information can be found at the conference website: http://icnct-12.umin.jp/index.html.

CALENDAR

December 2005

9th European Nuclear Congress (ENC 2005), Dec. 11–14, 2005, Palais de Congrès, Versailles, France. Contact: Sylvie Delaplace, FSEN (phone 33-1-53-53-3216, fax 33-1-53583211, email enc2005@sfen.fr, www.sfen.fr/enc2005).

January 2006

MCNPX Introductory Workshop, Jan. 9–13, 2006, Las Vegas, NV. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com, url http://mcnpxworkshops.com).

International Conference on Application of Radio-tracers in Chemical, Environmental and Biological Sciences (ARCEBS 06), Jan. 23–27, 2006, Kolkata, West Bengal, India. Contact: Susanta Lahiri at arcebs06@saha.ac.in.

February 2006

German Atomic Forum Winter Meeting, Feb. 8–9, 2006, Berlin. Contact: Anette Wiederhold, dbcm GmbH, Conference Office WT 2006, Kamillenweg 16-18, D-53757 Sankt Augustin, Germany. (fax 49-0-2241-9389712, email Annette.wiederhold@dbcm.de).

Waste Management 2006 (WM'06) Feb. 26–Mar. 2, 2006, Tucson, AZ. Contact: WM Symposia, Inc., P.O. Box 35340, Tucson, AZ 85740 (phone 520-696-0399, fax 520-615-8997, www.wmsym.org).

March 2006

HEART Conference, March 6–10, 2006, Santa Clara, CA. Contact: Technical Program Chair, Dennis Breuner (phone 858-720-7072, email dbreuner@titan.com).

TopNux: Securing the Future—The Role of Nuclear Energy, March 21–23, 2006, London, England. Contact: Dionne Bosma, ENS (phone 32-2-505-3054, fax 32-2-502-3902, email Dionne.boxma@euronuclear.org).

MCNPX Intermediate Workshop, March 27–31, 2006, Cape Town, South Africa. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com, url http://mcnpxworkshops.com).

April 2006

14th Biennial Topical Meeting of the ANS Radiation Protection and Shielding Division, April 3–6, 2006, Carlsbad, New Mexico. Contact: http://www.ans-rpsw-carlsbad.com/.

Methods and Applications of Radioanalytical Chemistry (MARC VII), April 3–7, 2006, Kona, Hawaii. Contact: B. Stephen Carpenter, General Chair, National Institute of Standards and Technology, 100 Bureau Dr., Stop 1090, Gaithersburg, MD 20899 (phone 301-975-4119).

Two-day training course on neutron spectra unfolding, April 7–8, 2006, Cape Town, South Africa. Contact: Burkhard Wiegel, PTB, email Burkhard.Wiegel@ptb.de or http://www.ptb.de/utc2006/.

International High-Level Radioactive Waste Management Conference (2006 IHLWM), April 30–May 4, 2006, Las Vega, Nevada. Contact: Daniel B. Bullen, General Chair, Exponent, 185 Hansen Court, Suite 100, Wood Dale, IL 60191 (phone 630-274-3223, fax 630-274-3299, email dbullen@exponent.com).

June 2006

ANS Annual Meeting, "A Brilliant Future: Nexus of Public Support in Nuclear Technology," June 4–8, 2006, Reno, Nevada. Contact: http://www.ans.org/meetings/index.cgi?c=n.

MCNPX Introductory Workshop, June 12–16, 2006, Santa Fe, NM. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com, url http://mcnpxworkshops.com).

EXRS 2006–European Conference on X-Ray Spectrometry, June 19–23, 2006, Paris, France. Contact: exrs2006@cea.fr, http://www.nucleide.org/exrs2006/.

September 2006

PHYSOR-2006, "Advances in Nuclear Analysis and Simulation," Sept. 10–14, 2006, Vancouver, BC, Canada. Contact: Ken Kozier, Technical Program Co-Chair, Atomic Energy of Canada Limited (AECL), Chalk River Laboratories, Chalk River, Ontario, Canada K0J 1J0 (Phone: 613-584-8811 ext.5059, email: physor2006@aecl.ca, web http://www.cns-snc.ca/physor2006/).

November 2006

ANS Winter Meeting and Nuclear Technology Expo, "Securing the Future in Times of Change," Nov. 12–16, 2006, Albuquerque, NM. Contact: http://www.ans.org/meetings/index.cgi?c=n.

September 2007

ICENES2007, Istanbul. Contact: http://www.icenes2007.org/