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# Radiation Safety Information Computational Center

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*Part of human nature resents change, loves equilibrium, while another part welcomes novelty, loves the excitement of disequilibrium. There is no formula for the resolution of this tug-of-war, but it is obvious that absolute surrender to either of them invites disaster.—J. Bartlet Brebner*

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## Nuclear Energy Agency Marks 50

The Organization for Economic Cooperation and Development (OECD) Nuclear Energy Agency (NEA) celebrates 50 years in service February 2008. The Agency was established February 1, 1958, in response to a report commissioned by the Organization for European Economic Cooperation (OEEC, now known as OECD) to identify solutions to European energy problems. The report recognized the potential of nuclear energy and emphasized that cooperation among the member countries would be of great importance in the development of nuclear power. Three primary objectives were established for the Agency:

1. the establishment of joint research projects,
2. the solution of specific legal problems related to nuclear energy through the harmonization of national laws or the adoption of regional conventions, and
3. the provision of a forum in which the national nuclear energy programs of member countries could be discussed and coordinated.

Though membership was initially drawn from Western Europe, Japan became the first country outside that geographic boundary to join the agency. Member countries now number 28, and the prospect is that the number will continue to grow.

RSICC and its user community has benefited from a cooperative relationship with the NEA Data Bank which operates within the framework of the NEA.

## **RSICC and NEADB Co-sponsor Geant4 Training Course**

RSICC and the OECD Nuclear Energy Agency Data Bank (NEADB) will co-sponsor a Geant4 Training Course at Oak Ridge National Laboratory the week of May 19–23, 2008. GEANT4 is a software toolkit for the simulation of the interaction of particles with matter for applications in the areas of high energy physics, space science, astrophysics, medical physics and imaging, nuclear physics and radiation background studies.

The course will be a one-week introductory course on the Geant4 Toolkit offering a basic knowledge of its main features. Attendees will learn to design, implement and run simple simulation applications via early morning lectures and afternoon hands-on exercises. Pre-requisites of the class are a basic knowledge of C++ and a familiarity with the basic concepts of Monte Carlo simulation for particle interactions with matter. The course will be taught by experienced Geant4 Collaboration members with extensive expertise in the development and application of the toolkit.

The registration deadline for the Geant4 Course is **March 15**. The registration fee is \$1500 payable by check written on a U.S. bank or via credit card. Class size is limited, and the course is subject to cancellation if minimum enrollment is not met.

Attendees will be required to bring personal laptops with Geant4 installed. The toolkit is freely available for download at <http://geant4.web.cern.ch/geant4/>.

A detailed agenda, registration form, payment options, training team info, and links to the CERN developers' web site will be posted on RSICC's web site at <http://rsicc.ornl.gov/rsiccnew/geant4.htm>.

## **New Nuclear Technology Programs at Linn State Technical College: Advanced Technology Center**

Over the past six years, the University of Missouri and Linn State Technical College/Advanced Technology Center (Mexico, MO) have had an educational partnership with nuclear industry employers, the goal of which is supporting U.S. nuclear utilities with high quality, industry-led technical degree programs. The first collaborative effort was the development of a two-year Nuclear Technology degree that began in the fall of 2004, developed primarily to train radioactive protection technicians (RPT). There are now 20 graduates of the LSTC/ATC program, 18 of which are fully employed at a nuclear facility.

Twelve of the graduates were hired as RP technicians at nuclear power plants and, because the curriculum also includes training in reactor theory and overall nuclear plant operations, one graduate was hired as an AEO at a nuclear power plant, and five were hired by the Missouri University Research Reactor as entry-level reactor operators.

In addition to the existing RPT degree, two additional options will be offered starting in the Fall 2008 semester under the Nuclear Technology degree program: Reactor Operations, and Instrumentation and Control.

LSTC/ATC and MU are currently working on another two-year degree program for implementation at LSTC/ATC—Nuclear Quality Control Technology—which will provide specialty education, training, and certification to meet the nuclear industry's standards and high demand for Quality Control/NDE Technicians and Inspectors.

The MU-LSTC/ATC initiatives receive financial support from the U.S. Department of Energy Innovations in Nuclear Infrastructure and Education program, the U.S. Department of Labor Education and Training Administration's President High Growth Jobs Training Initiative, and the U.S. Nuclear Regulatory Commission's Nuclear Education Grant Program. Four other community colleges are

participating in the DOL grant for radiation protection technology, and are in the process of adopting and implementing an RPT degree at their respective institutions. These partner schools are: [Central Virginia Community College](#), Lynchburg, VA; [Estrella Mountain Community College](#), Avondale, AZ; [Hill College](#) in Texas; and [MiraCosta Community College](#) in California.

For additional information on the LSTC/ATC programs, contact Randy L. Etter (Executive Director) at 573-473-9603, or by email at [Randy.Etter@linnstate.edu](mailto:Randy.Etter@linnstate.edu). For information on the DOL and NRC grant activities, please contact Dr. William H. Miller at [MillerW@missouri.edu](mailto:MillerW@missouri.edu).

## **Changes to the Computer Code and Data Collection**

### **[CCC-656/WIMSD-5B.12](#)**

Answers Software Service, AEA Technology, Winfrith, Dorset, United Kingdom, through the OECD Nuclear Energy Agency Data Bank, Issy-Les Molineaux, France, contributed the Winfrith improved multigroup scheme (WIMS) code system for reactor lattice cell calculations on a wide range of reactor systems. This package contains the WIMSD-5B.12, WILLIE and UPD codes and the standard 69-group WIMS library. The major modifications and extensions are:

- upper limit extended from 69 to 200 energy groups,
- upper energy of the first fast group extended from 10 to 20 MeV,
- number of allowed resonance groups extended from 13 to 55,
- number of allowed resonant isotopes increased to 30,
- maximum number of nuclides in the library increased to 300,
- maximum number of burnable nuclides in WIMS-D input increased to 60, and
- modification to handle WIMS-D libraries with an extended format that includes multiple product-nuclei reactions

WIMSD-5B.12 was tested at NEADB on a PC running Windows XP with LF95 and on a Digital Personal Workstation running Digital Unix 4.0 with Digital F77 V5.2. It was tested at RSICC on a Pentium PC running Microsoft® Windows XP™ with Lahey-Fujitsu LF95 FORTRAN versions 5.50d, v5.60, and v7.1 and on an AMD Opteron running RedHat EL4 Linux with Portland pgi-6.0-2 FORTRAN. A FORTRAN compiler is required on all systems. References: AEEW-R 2133. FORTRAN; PC or Digital Workstation (C00656/MNYCP/02).

### **[DLC-231/WLUP3.0](#)**

The International Atomic Energy Agency, Nuclear Data Section, Vienna, Austria, through the OECD Nuclear Energy Agency Data Bank, Issy-Les Molineaux, France, contributed these 69- and 172-group cross section libraries for WIMS. WLUP contains validated WIMS-D formatted cross section libraries in 69 and 172 energy group structures for nuclear reactor calculations. Included are materials from recently released evaluated nuclear data libraries such as JEFF-3.1, JEF-2.2, JENDL-3.2, and ENDF/B-VI rev 8.

The WIMS Library Update Project (WLUP) was organized by the Nuclear Data Section of the IAEA. The “Jozef Stefan” Institute was supported by the IAEA through a research contract to co-ordinate technical issues related to the project. The NJOY nuclear data processing system from Los Alamos National Laboratory (LANL) was applied for generating the cross section files following the models and conventions built into the WIMS-D lattice code. WLUP is an interactive HTML-type file system. The package includes:

- WIMSD-IAEA 69 group library prepared from selected evaluated data files,
- WIMSD-IAEA 172 group library prepared from selected evaluated data files,
- IAEA-Technical Report with detailed documentation,
- data processing inputs for NJOY and WILLIE,
- benchmark inputs models for WIMS, and
- system of auxiliary codes developed under the Coordinated Research Project.

WLUP is accessible under DOS, Windows, Unix, and Linux. The data libraries and documentation references are transmitted on one CD in a GNU-compressed Linux tar file. Windows users may extract the files with WinZIP 8.0 or later. Reference: WLUP final report of coordinated research project, IAEA, Vienna (2006). FORTRAN; Pentium (D00231/MNYCP/00).

## 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](mailto: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.

### Geant4 Training Course

RSICC and the OECD Nuclear Energy Agency Data Bank (NEADB) will co-sponsor a Geant4 Course at Oak Ridge National Laboratory the week of May 19–23, 2008. GEANT4 is a software toolkit for the simulation of the interaction of particles with matter for applications in the areas of high energy physics, space science, astrophysics, medical physics and imaging, nuclear physics and radiation background studies. Attendees are required to bring personal laptops with Geant4 installed. The toolkit is freely available for download at <http://geant4.web.cern.ch/geant4/>. A detailed agenda, registration form, payment options, training team info, and links to the CERN developers’ web site will be posted on RSICC’s web site at <http://rsicc.ornl.gov/rsiccnew/geant4.htm>.

### TRIPOLI Workshop

A training course on the Monte Carlo computer code [TRIPOLI-4](#) will be held at OECD/NEA Headquarters from April 7–11, 2008. The new version that is being released contains cross section libraries from the latest evaluations. It also contains an interactive pre-processor for preparing geometries. The TRIPOLI-4 Course Programme can be found at <http://www.nea.fr/html/dbprog/Newsletter/Tripoli-4-course-programme.pdf> and the Registration Form at <http://www.nea.fr/html/dbprog/Newsletter/TRIPOLI-Registration-Form-Issy2008.doc>.

No fee will be levied for participating in the training course; however the cost of luncheons and hotel must be covered by participants. Contact Catherine Rocher-Thromas or Cristina Lebunetelle, either by email, [programs@nea.fr](mailto:programs@nea.fr), or by fax + 33 1 45 24 11 09.

## Spring 2008 SCALE Training Courses at ORNL

Date	Title	Description
March 31–April 4, 2008	ORIGEN-ARP/TRITON Course	ORIGEN-ARP: Isotopic depletion/decay and source terms using latest version of ORIGEN TRITON: 2-D reactor physics analysis using NEWT
April 7–11, 2008	KENO-VI Criticality Safety Course	Criticality safety using the generalized geometry version of KENO (includes KENO3D and Gee Wiz).

The registration fee is \$1800 for each course. A late fee of \$300 will be applied for late registrations. A discount of \$300 per each additional week will be applied for registration to multiple courses. **Class size is limited and course may be canceled if minimum enrollment is not obtained one month prior to the course.** Course fees are refundable up to one month before each class. **Note that all attendees must be registered SCALE 5 or 5.1 users.** All foreign national visitors must register a minimum of 40 days prior to the start date of the training course they plan to attend. Course descriptions may be found at [http://www.ornl.gov/sci/scale/course\\_description.htm](http://www.ornl.gov/sci/scale/course_description.htm).

## Introductory and Advanced MCNP Visual Editor Training

Date	Class	Location
March 31–April 4, 2008	<a href="#">Introduction to MCNP using the MCNP/MCNPX Visual Editor</a>	Richland, WA
May 19–23, 2008	<a href="#">Introduction to MCNP using the MCNP/MCNPX Visual Editor</a>	Richland, WA
July 21–25, 2008	<a href="#">Introduction to the Visual Editor for Advanced MCNP/MCNPX Users.</a>	Richland, WA
Sept. 8–12, 2008	<a href="#">Introduction to MCNP using the MCNP/MCNPX Visual Editor</a>	Richland, WA
Nov. 3–7, 2008	<a href="#">Introduction to MCNP using the MCNP/MCNPX Visual Editor</a>	Richland, WA

Classes are taught using the most recent (beta) version of the Visual Editor Code. Beta versions will only be available to students that own the RSICC version 5 release. Bring proof of ownership to the class.

The introductory classes combine teaching on MCNP physics, along with instructions on how to use the Visual Editor. The advanced class assumes the user has experience using MCNP or MCNPX and focuses on Visual Editor topics. Computer demonstrations and exercises will focus on creating and interrogating input files with the Visual Editor. Advanced visualization work using MCNP will also be demonstrated. Both the introductory and advanced classes will be taught on Pentium computers running Windows 2000. Attendees are encouraged to bring their own input files for viewing and modifying in the visual editor. The course description and registration information can be found at <http://www.mcnpvised.com/index.html>.

## MCNP Class Schedule

April 7–10, 2008	<a href="#">Criticality Calculations with MCNP5</a>	Los Alamos National Laboratory
May 12–16, 2008	<a href="#">MCNPX Intermediate Workshop</a>	ITN, Lisbon, Portugal
June 16–20, 2008	<a href="#">Introduction to MCNP5 and MCNPX</a>	Los Alamos National Laboratory

Introductory classes are for people who have little or no experience with MCNP. This class surveys the features of MCNP so the beginning user will be introduced to the capabilities of the program and will have hands-on experience at running the code to solve simple problems. Course topics include Basic Geometry, Source Definitions, Output (Tallies), Advanced Geometry (repeated structures specification), Variance Reduction Techniques, Statistical Analysis, Criticality, Plotting of Geometry and Tallies, and Neutron / Photon / Electron Physics.

Advanced classes are for people with MCNP experience who want to extend their knowledge and gain depth of understanding. Most areas of MCNP operation will be discussed in detail, with emphasis on Advanced Geometry, Advanced Variance Reduction Techniques, and other advanced features of the program. Time will be available to discuss approaches to specific problems of interest to students. Classes on specific topics are offered when there is sufficient interest. In the recent past, classes on variance reduction and on criticality have been taught.

Registration and the most current information can be found at <http://mcnp-green.lanl.gov/classinformation.html>.

## **International Symposium on Reactor Dosimetry**

The 13<sup>th</sup> *International Symposium on Reactor Dosimetry* will be held the May 25–30, 2008, in the Hotel Akersloot, 6 kilometers south of Alkmaar in the Netherlands. This Symposium has a long history and has been organized approximately every three years alternately in Europe and the United States or Japan. The Symposium theme is dosimetry for the assessment of irradiated reactor materials and reactor experiments, featuring radiation metrology techniques, data bases, and standardization.

This Symposium is jointly organized by ASTM Committee E 10 on Nuclear Technology and Applications and the European Working Group on Reactor Dosimetry (EWGRD). The 13<sup>th</sup> symposium is hosted by The Joint Research Centre, Institute for Energy, Petten. Up-to-date information is available at the website, <http://safelife.jrc.nl/ISRDL/>.

## **American Nuclear Society: 2008 Annual Meeting**

“*Nuclear Science and Technology: Now Arriving on Main Street*” is the theme for the 2008 American Nuclear Society Annual Meeting which will be held June 8–12, 2008, in Anaheim, California. It will include three embedded topical meetings which are described below.

### **ICAPP’08**

2008 *International Congress on Advances in Nuclear Power Plants (ICAPP’08)* will be held June 8-12, 2008, in Anaheim, California. This congress will bring together international experts of the nuclear industry involved in the operation, development, building, regulation, and research related to nuclear power plants. The program will cover the full spectrum of nuclear power plant issues from design, deployment and construction of plants to research and development of future designs and advanced systems. Details and up-to-date information can be found by contacting 2008 International Congress on the Advances in Nuclear Power Plants (ICAPP '08), Attn: Lynne Schreiber, PO Box 116502, Gainesville, FL 32611-6502 (phone 1-352-392-9722, fax 1-352-392-8656, email: [icapp@ans.org](mailto:icapp@ans.org)) url [www.ans.org/goto/icapp08](http://www.ans.org/goto/icapp08).



## **Nuclear Fuels and Structural Materials for the Next Generation Nuclear Reactors**

*Nuclear Fuels and Structural Materials for the Next Generation Nuclear Reactors*, will be held June 8–12, 2008, Anaheim, California. The Generation IV International Forum has selected six advanced systems for consideration: the gas-cooled fast reactor system, lead-cooled fast reactor system, molten salt reactor system, sodium-cooled fast reactor system, supercritical water-cooled reactor system, and very-high-temperature reactor system. This embedded topical will bring together fuels and materials experts in all areas of Generation IV technologies. The ANS will publish accepted summaries in the *Transactions*. The General Chairs for the meeting are Todd Allen, University of Wisconsin, and Lance Snead, Oak Ridge National Laboratory. Additional information may be found at <http://www.ans.org/meetings/index.cgi?c=n>.

## **Isotopes for Medicine and Industry**

*Isotopes for Medicine and Industry* will be held June 9–11, 2008, in Anaheim, California. The continuing rapid growth of radioisotopes for both medical and industrial applications is of national and international interest. The expanding applications and associated production issues surrounding the supply of research, diagnostic, therapeutic, environmental, and industrial radioisotopes will be discussed. Accepted summaries will be included in the *Transactions* CD that will be distributed at the ANS Annual Meeting. The General Chair is Wynn A. Volkert, University of Missouri, Columbia, and the Technical Program Chair is Ralph A. Butler, University of Missouri, Columbia. Additional information may be found at <http://www.ans.org/meetings/index.cgi?c=n>.

## **NPAE-Kyiv2008**

The *Second International Conference on Current Problems in Nuclear Physics and Atomic Energy (NPAE-Kyiv2008)* will be held June 9–15, 2008 in Kyiv, Ukraine.

The first International Conference on Current Problems in Nuclear Physics and Atomic Energy (NPAE-Kyiv2006) was held in Kyiv (Ukraine) in 2006; the proceedings are available at [http://www.kinr.kiev.ua/NPAE\\_Kyiv2006/](http://www.kinr.kiev.ua/NPAE_Kyiv2006/).

This conference brings together scientists to share knowledge in current problems of nuclear physics and atomic energy. The NPAE-Kyiv2008 conference will cover the following topics:

- collective processes in atomic nuclei,
- nuclear reactions at low and high energies,
- nuclear structure and decay data,
- rare nuclear processes,
- nuclear astrophysics,
- neutron and reactor physics,
- nuclear data and data evaluation,
- problems of atomic energy,
- applied nuclear physics in medicine and industry, and
- experimental facilities and detection techniques.

One-page abstracts are due via email to [npae-kyiv2008@kinr.kiev.ua](mailto:npaе-kyiv2008@kinr.kiev.ua) by March 1, 2008. The conference will consist of plenary sessions, parallel sessions, and poster sessions. Plenary sessions are composed of invited talks, and parallel sessions consist of invited talks and oral presentations selected from contributions. The working language of the conference is English.

The NPAE-Kyiv2008 conference is organized by the National Academy of Sciences of Ukraine (NASU, <http://www.nas.gov.ua>), the Institute for Nuclear Research of NASU, Kyiv (KINR, <http://www.kinr.kiev.ua>) in collaboration with Taras Shevchenko National University of Kyiv (NTSU, <http://www.univ.kiev.ua>). The conference chairman is I.M. Vyshnevskiy (KINR) and the scientific secretaries are V.Yu. Denisov (KINR) and O.O.Gritzay (KINR).

The Proceedings of the Conference will be published by the Publishing Department of KINR; selected papers will be also published in *Nuclear Physics and Atomic Energy* (<http://jnnpae.kinr.kiev.ua>).

Please address all mail and questions concerning the scientific program, publication, etc. to: Dr. Vitali Yu. Denisov or Dr. Olena O. Gritzay, Institute for Nuclear Research, Prospect Nauky, 47, Kyiv, 03680, Ukraine (email [npae-kyiv2008@kinr.kiev.ua](mailto:npaе-kyiv2008@kinr.kiev.ua)). Information on the conference may be found at the website <http://www.kinr.kiev.ua/NPAE-Kyiv2008>.

## **Practical MCNP for the Health Physicist, Medical Physicist, and Rad Engineer**

**DATES:** 23–27 June 2008

**FEE:** \$1,800 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<sup>TM</sup> 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<sup>TM</sup> to solve a variety of practical problems in radiation shielding and dosimetry. The intent is to “jump start” the student toward using MCNP<sup>TM</sup> 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<sup>TM</sup> 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 CD 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 and is co-sponsored by RSICC.

Registration is available online at: <http://drambuie.lanl.gov/~esh4/mcnp.htm>. Non-US citizens need to register 60 days in advance to allow for necessary visitor approvals. Make checks payable to the University of California (checks must be in U.S. dollars on a U.S. bank) and mail together with name, address, and phone number to David Seagraves, Mail Stop J573, Los Alamos National Laboratory, Group RP-2, 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](mailto:dseagraves@lanl.gov). Technical questions may also be directed to Dick Olsher, 505-667-3364; e-mail: [dick@lanl.gov](mailto: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.

[Dick Olsher](#)



## IRRMA 7



The 7<sup>th</sup> International Topical Meeting on Industrial Radiation and Radioisotope Measurement Application will take place June 22–27, 2008, in Prague, Czech Republic. It is organized to bring together scientists and engineers from around the world who are interested in radiation and radioisotope measurement applications. The first meeting in this series took place in Pinehurst, North Carolina, U.S.A. in 1988. The meeting is devoted to current trends and future issues. The scientific sessions will include invited lectures by leading experts in the field, contributed oral papers and poster presentations of contributed papers. Attendees will have an opportunity to share ideas on industrial uses of radiation and radioisotopes, and also on research and applications in related fields such as medicine, art and cultural heritage, the environment, detection of explosives and contraband, materials testing and new trends in radiation sources and detector development. The deadline for submission of abstract is February 29, 2008. Topics to be included on the conference agenda include:

- Ionizing radiation sources and measurement
- Industrial applications and radiation technologies
- Radiation in physical and material sciences
- Biological and medical applications of radiation
- Radiation in environmental sciences and research
- Applications to archaeometry and cultural heritage
- Detection of contraband and explosives
- Monte Carlo Modelling

Papers recommended by the standard refereeing process will be published in the conference proceedings, in a special issue of *Applied Radiation and Isotopes*. The Chairman of the Organizing Committee is Ladislav Musílek, Czech Technical University in Prague, Faculty of Nuclear Sciences and Physical Engineering, Břehová 7, 115 19 Praha 1, Czech Republic. The program and details about the conference will be posted at <http://irrma7.fjfi.cvut.cz> and email may be sent to [irrma7@fjfi.cvut.cz](mailto:irrma7@fjfi.cvut.cz).

## PHYSOR'08

The International Conference on the Physics of Reactors (PHYSOR'08) will be held at the Kursaal Conference Center, Interlaken, Switzerland, September 14–19, 2008. The conference theme is “Nuclear Power: A Sustainable Resource,” and is jointly organized by the Paul Scherrer Institut and the Swiss Nuclear Society. This international conference follows the tradition of the earlier PHYSOR meetings and seeks to provide a forum for worldwide experts in reactor physics, nuclear power plant analysis and related technologies. Relevant information may be found at <http://www.physor2008.ch/>.

## **18th Topical Meeting on the Technology of Fusion Energy**

The 18th Topical Meeting on the Technology of Fusion Energy (18<sup>th</sup> TOFE) will be held in San Francisco, California, September 28–October 2, 2008. The TOFE meeting provides a forum for sharing the exciting progress made in fusion research as well as presenting the future plans for national and worldwide fusion programs. The conference is sponsored by the American Nuclear Society (ANS), Northern California Section of the ANS, Lawrence Livermore National Laboratory, and the Atomic Energy Society of Japan. The call for papers has been issued and abstracts on the following topics may be submitted beginning on March 1, 2008.

- NIF, ITER and other experimental devices
- Material and component testing facilities

- Magnets
- Next step facilities & Demo
- Diagnostics
- Power plant studies
- First walls, blankets & shields
- Alternate, non-electric applications
- IFE driver and chamber technology
- Plasma engineering, heating and control
- IFE target design, fabrication and injection
- Divertors and other high heat flux components
- Tritium breeding, handling and processing
- Nuclear analysis and experiments
- Safety and environment
- Computational tools and validation experiments
- Materials development and modeling
- Fabrication, assembly and maintenance
- Power conversion and conditioning

For additional information, please contact the General Chair: Jeff Latkowski, 18th TOFE Meeting, 4435 First Street #155, Livermore, CA 94551 (phone 925-423-9378, fax 925-424-6401, email: [latkowski@llnl.gov](mailto:latkowski@llnl.gov)). Check the website, <http://www.18th-tofe.com/>, frequently for updated information, registration information, etc.

## IRPA 12

The 12th International Congress of the International Radiation Protection Association (IRPA 12), will take place in Buenos Aires, Argentina, October 19–24, 2008. To support the Congress motto, “strengthening radiation protection worldwide” the scientific areas and topics are divided into three parts:

### Part 1: Epistemological Basis of Radiation Protection

1. Characterisation of Radiation Exposure
2. Biological Effects of Radiation Exposure

### Part 2: Radiation Protection Paradigm

1. Developing the Radiation Protection Framework
2. Developing Protection Policies, Criteria, Methods and Culture
3. Emergency Planning, Preparedness and Response

### Part 3: Radiation Protection and Safety in Practice

1. Nuclear Installations
2. NIRs
3. Medicine
4. NORM in Industry
5. Other Applications and Practices

All information regarding registration, technical program, etc., may be found at the website, [www.irpa12.org.ar](http://www.irpa12.org.ar). Questions regarding all aspects of the Congress may be addressed to [secretariat@irpa12.org.ar](mailto:secretariat@irpa12.org.ar).

## LOWRAD 2008

The 7<sup>th</sup> International Meeting on the Effects of Low Doses of Radiation in Biological Systems: New Perspectives on Human Exposure will be held in Lisbon, Portugal, November 27–29, 2008. The meeting is being organized by members of the Radiobiology group of the Department of Radiological Protection and Nuclear Safety of the Portuguese Nuclear and Technological Institute. Topics include:

- Epidemiology of occupational and environmental low dose exposure
- Novel biomarkers for population screening in low dose exposures
- Non-targeted effects
- Computer simulation and modelling for low dose radiation risk
- Genetic susceptibility

- Radioecology
- Low dose and protracted exposure effects
- Validity of the linear non-threshold model
- Hormesis and adaptive response
- Microenvironment modulation of radiation response
- Radioactive waste management
- Micro-array and proteomic analysis
- DNA repair and misrepair
- Radioprotectors and radiosensitizers
- Molecular and biophysical approaches to radiation-induced carcinogenesis
- Non-genetic effects of radiation
- Genomic and chromosomal instability
- Long term effects of the medical applications of radiation
- Microdosimetry and nanodosimetry

The deadline for abstract submission is April 30, 2008. Submission via the website will be available soon. Contact Margarida Goulart de Medeiros (phone +351 21 994 6347, fax +351 21 994 1995), Octávia Monteiro Gil (phone +351 21 994 6344, fax +351 21 994 1995), or Secretariat, Luisa Oliveira (email [lowrad2008@itn.pt](mailto:lowrad2008@itn.pt)), Nuclear and Technological Institute Department of Radiological Protection and Nuclear Safety Estrada Nacional 10, 2686 - 953 Sacavém, Portugal. Watch the website, <http://www.lowrad2008.itn.pt/index.html>, for abstract submission and up-to-date information.

## **Radionuclide Therapy and Radiopharmaceutical Dosimetry**

The 3rd International Symposium on Radionuclide Therapy and Radiopharmaceutical Dosimetry and Workshop on Alpha-Emitting Radionuclides in Therapy will convene June 13–17, 2009, in Toronto, Canada, in conjunction with the 2009 Society of Nuclear Medicine (SNM) Annual Meeting, which is being planned. This symposium follows the successful first (Helsinki 2004) and second (Athens 2006) symposiums. This 2009 RTRD Symposium will blend with SNM sessions in oncology, radiopharmaceutical chemistry, radiobiology and dosimetry. The workshop will highlight current progress in the use of alpha-emitters for cancer therapy, continuing a series of successful alpha-emitter workshops. Symposium topics will include:

- Data collection and quantitative imaging
- Biodistribution and pharmacokinetics
- Clinical dosimetry and treatment planning
- Alpha emitters in cancer therapy
- Auger electron emitters
- Radiobiological studies
- Therapy of skeletal metastases and bone pain palliation

All announcements and mailings for the Symposium will be electronic and by website postings. Those who wish to participate in the Symposium must register with SNM to attend the Annual Meeting. Separate Symposium registration will not be offered. Registration, housing, local arrangements, transportation, and other logistical arrangements will be handled by SNM. Local arrangement details will be available at a later date on the SNM website at: [www.snm.org](http://www.snm.org). A future announcement will provide instructions for submitting abstracts. George Sgouros ([gsgouros@jhmi.edu](mailto:gsgouros@jhmi.edu)) is Vice-chair of the organizing Committee and Michael Lassmann ([Lassmann\\_M@klinik.uni-wuerzburg.de](mailto:Lassmann_M@klinik.uni-wuerzburg.de)) is Chair of the Committee.

# CALENDAR

## March 2008

International Workshop on Monte Carlo Codes, March 3–4, 2008, Birchwood Conference Centre, Risley, Warrington, Cheshire UK. Contact: Paul Hulse (Paul.Hulse@sellafieldsites.com, phone +44 (0)1925 833073, or fax +44 (0)1925 833930) or Andrew Cooper (Andrew.J.Cooper@sellafieldsites.com, phone +44 (0)1925 833164 or fax +44 (0)1925 833930) url <http://www.mcneg.org.uk/>.

Introduction to MCNP using the MCNP/MCNPX Visual Editor, March 31–April 4, 2008, Richland, WA. Contact: <http://www.mcnpvised.com/index.html>.

ORIGEN-ARP/TRITON Course, March 31–April 4, 2008, Oak Ridge National Laboratory, Oak Ridge, TN. Contact: [http://www.ornl.gov/sci/scale/course\\_description.htm](http://www.ornl.gov/sci/scale/course_description.htm).

## April 2008

[Criticality Calculations with MCNP5](#), April 7–10, 2008, Los Alamos National Laboratory. Contact: [nbutner@lanl.gov](mailto:nbutner@lanl.gov), url <http://mcnpx.lanl.gov/>.

KENO-VI Criticality Safety Course, April 7–11, 2008, Oak Ridge National Laboratory, Oak Ridge, TN. Contact: [http://www.ornl.gov/sci/scale/course\\_description.htm](http://www.ornl.gov/sci/scale/course_description.htm).

TRIPOLI-4 will be held at OECD/NEA Headquarters from April 7–11, 2008, Contact: Catherine Rocher-Thomas or Cristina Lebunetelle, (email, [programs@nea.fr](mailto:programs@nea.fr), fax + 33 1 45 24 11 09), url <http://www.nea.fr/html/dbprog/Newsletter/TRIPOLI-Registration-Form-Issy2008.doc>.

11<sup>th</sup> International Conference on Radiation Shielding (ICRS-11) and the 15th Topical Meeting of the Radiation Protection and Shielding Division (RPSD-2008) of the American Nuclear Society, April 13–18, 2008, Callaway Gardens, Pine Mountain, Georgia. Contact: General Chair, Nolan Hertel, Georgia Institute of Technology (email [nolan.hertel@me.gatech.edu](mailto:nolan.hertel@me.gatech.edu)) or General Co-Chair, Pedro Vaz, ITN, Portugal (email [pedrovaz@itn.pt](mailto:pedrovaz@itn.pt)) url <http://icrs11.me.gatech.edu/index.htm>.

## May 2008

Intermediate MCNPX, May 12–16, 2008, Lisbon, Portugal. Contact: [nbutner@lanl.gov](mailto:nbutner@lanl.gov), url <http://mcnpx.lanl.gov/>.

Geant4 Workshop, May 19–23, 2008, Oak Ridge National Laboratory, Oak Ridge, TN. Contact: <http://rsicc.ornl.gov/rsiccnew/geant4.htm>.

Introduction to MCNP using the MCNP/MCNPX Visual Editor, May 19–23, 2008, Richland, WA. Contact: <http://www.mcnpvised.com/index.html>.

13th International Symposium on Reactor Dosimetry, May 25–30, 2008, Alkmaar in the Netherlands. Contact: the website at <http://safelife.jrc.nl/ISRDL/>.

## June 2008

American Nuclear Society: 2008 Annual Meeting, “Nuclear Science and Technology: Now Arriving on Main Street,” June 8–12, 2008, Anaheim, California. The call for papers can be found at <http://www.ans.org/meetings/docs/2008/am2008-cfp.pdf>.

2008 International Congress on Advances in Nuclear Power Plants (ICAPP’08), June 8–12, 2008, Anaheim, California. Information can be found at <http://www.inspi.ufl.edu/icapp08/index.html>.

Nuclear Fuels and Structural Materials for the Next Generation Nuclear Reactors, June 8–12, 2008, Anaheim, California. Contact: Todd Allen, University of Wisconsin, 529 Engineering Research Building, 1500 Engineering Dr., Madison, WI 53706 (phone 608-265-4083, email [allen@engr.wisc.edu](mailto:allen@engr.wisc.edu)).

Isotopes for Medicine and Industry, June 9–12, 2008, Anaheim, California. Contact: Wynn A. Volkert, University of Missouri, Room 330 Hadley Hall, Columbia, MO 65211 (phone 573-882-6759, email [VolkertW@health.missouri.edu](mailto:VolkertW@health.missouri.edu)).

2<sup>nd</sup> International Conference on Current Problems in Nuclear Physics and Atomic Energy (NPAE-Kyiv2008), June 9–15, 2008, Kyiv, Ukraine. Contact: Dr. Vitali Yu. Denisov or Dr. Olena O. Gritzay, Institute for Nuclear Research, Prospect Nauky, 47, Kyiv, 03680, Ukraine (email [npae-kyiv2008@kinr.kiev.ua](mailto:npae-kyiv2008@kinr.kiev.ua)) url <http://www.kinr.kiev.ua/NPAE-Kyiv2008>.

Introduction to MCNP5 and MCNPX, June 16–20, 2008, Los Alamos National Laboratory. Contact: [nbutner@lanl.gov](mailto:nbutner@lanl.gov), url <http://mcnpx.lanl.gov/>.

7th International Topical Meeting on Industrial Radiation and Radioisotope Measurement Application, June 22–27, 2008, Prague, Czech Republic. Contact: E-mail: [irrna7@fjfi.cvut.cz](mailto:irrna7@fjfi.cvut.cz) (phone only if absolutely necessary 420 224358246, Ms. Niederlová) url <http://irrna7.fjfi.cvut.cz/>.

Practical MCNP for the Health Physicist, Medical Physicist, and Rad Engineer, June 23–27, 2008, University of New Mexico-Los Alamos Campus. Contact: David Seagraves (phone 505-667-4959, fax 505-665-7686, e-mail [dseagraves@lanl.gov](mailto:dseagraves@lanl.gov)) url <http://drambuie.lanl.gov/~esh4/mcnp.htm>.

### **July 2008**

Introduction to the Visual Editor for Advanced MCNP/MCNPX Users, July 21–25, 2008, Richland, WA. Contact: <http://www.mcnpvised.com/index.html>.

### **September 2008**

Introduction to MCNP using the MCNP/MCNPX Visual Editor, Sept. 8–12, 2008, Richland, WA. Contact: <http://www.mcnpvised.com/index.html>.

PHYSOR'08, Sept. 14–19, 2008, Interlaken, Switzerland. Contact: [info@physor2008.ch](mailto:info@physor2008.ch), url <http://www.physor2008.ch/>.

18th Topical Meeting on the Technology of Fusion Energy (18th TOFE), Sept. 28–Oct. 2, 2008, San Francisco, California. Contact: General Chair: Jeff Latkowski, 18th TOFE Meeting, 4435 First Street #155, Livermore, CA 94551 (phone 925-423-9378, fax 925-424-6401, email: [latkowski@llnl.gov](mailto:latkowski@llnl.gov)) url <http://www.18th-tofe.com/>.

### **October 2008**

12th International Congress of the International Radiation Protection Association (IRPA 12), Oct. 19–24, 2008, Buenos Aires, Argentina. Contact: [secretariat@irpa12.org.ar](mailto:secretariat@irpa12.org.ar), url [www.irpa12.org.ar](http://www.irpa12.org.ar).

### **November 2008**

13<sup>th</sup> International Conference on Neutron Capture Therapy, Nov. 3–7, 2008, Florence, Italy. Contact: ICNCT-13 Secretary General ([icnct-13@pv.infn.it](mailto:icnct-13@pv.infn.it)) url <http://www.pv.infn.it/icnct-13/>.

Introduction to MCNP using the MCNP/MCNPX Visual Editor, Nov. 3–7, 2008, Richland, WA. Contact: <http://www.mcnpvised.com/index.html>.

LOWRAD 2008, Nov. 27–29, 2008 Lisbon, Portugal. Contact: Margarida Goulart de Medeiros (phone +351 21 994 6347, fax +351 21 994 1995), Octávia Monteiro Gil (phone +351 21 994 6344, fax +351 21 994 1995), or Secretariat, Luisa Oliveira (email [lowrad2008@itn.pt](mailto:lowrad2008@itn.pt)), Nuclear and Technological Institute Department of Radiological Protection and Nuclear Safety Estrada Nacional 10, 2686 - 953 Sacavém, Portugal. url <http://www.lowrad2008.itn.pt/index.html>.

### **June 2009**

3rd International Symposium on Radionuclide Therapy and Radiopharmaceutical Dosimetry and Workshop on Alpha-Emitting Radionuclides in Therapy, June 13–17, 2009, Toronto, Canada. Contact: George Sgouros ([gsgouros@jhmi.edu](mailto:gsgouros@jhmi.edu)) or Michael Lassmann ([Lassmann\\_M@klinik.uni-wuerzburg.de](mailto:Lassmann_M@klinik.uni-wuerzburg.de)) url [www.snm.org](http://www.snm.org).