Radiation Safety Information Computational Center

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A positive attitude may not solve all your problems, but it will annoy enough people to make it worth the effort.—Herm Albright

NEW PRICING MATRIX

As we continue to provide RSICC special services in software management and distribution, i.e., quality checks and repackaging, our charges will increase to reflect the partial funding needs to handle the 4000 active customers per year. The new schedule is listed below. RSICC wishes to thank those offices within DOE and NRC which provide additional support that help keep costs down and quality up. The following cost recovery fees will be effective April 1, 2005:

U.S. DOE and NRC offices that fund RSICC	No charge
Other US DOE offices, other government agencies, US educational institutions, Not For Profit organizations	$600
General public (includes other government contractors)	$800
ALL Non-US installations	$1000

Answers to frequently asked questions can be found at http://rsicc.ornl.gov/rsiccnew/faq.htm.

News from ANS

It's always a pleasure to share good news with our readers and the RSICC staff congratulates the recipients whose achievements have been recognized by their peers . The following information is taken from the January/February 2005 edition of the *ANS News.*

Badruzzaman and Binney Elected ANS Fellows

During the 2004 Winter Meeting of the ANS two members were recognized as Fellows of the American Nuclear Society at the Honors and Awards Luncheon for their outstanding contributions to the advancement of nuclear science and technology.

Ahmed Badruzzaman was recognized for outstanding contributions to the "field of advanced radiation transport methods and their utilization in the design of nuclear well-logging devices and development of their interpretation in complex reservoir conditions, his leadership in pushing nuclear logging research and development forward, and for proactively passing his knowledge to others through teaching." He has been a member of ANS since 1978 and is a staff research scientist at Chevron Texaco Energy Technology Co.

Stephen E. Binney, professor emeritus at Oregon State University, was recognized for "distinguished service to nuclear engineering education and the engineering profession, for his skillful mentoring and guidance serving multiple generations of undergraduate and graduate students, and for his vision of cooperation between university research reactors, creating the Western Nuclear Science Alliance, which serves as a model for other regional consortia to follow."

Presidential Citations

Samim Anghaie, professor at the University of Florida and director of the Innovative Nuclear Space Power and Propulsion Institute at the University, was cited for "outstanding leadership and support of American Nuclear Society meetings and technical programs," which includes his leadership in bringing together societies in the United States, Europe, and Asia for the International Meeting on LWR Fuel Performance.

John P. Gutteridge, director of University Programs at the U.S. Department of Energy's Office of Nuclear Energy, Science, and Technology, was recognized for "his dedication to nuclear engineering education and strong support for the academic and public education programs of the American Nuclear Society, …. He has been tireless in his efforts to assist ANS with arranging new programs to foster the education of both students and the general public."

Atambir S. Rao, a member since 2001, was recognized for "outstanding support of American Nuclear Society international activities. He is one of two founding members of the International Congress on Advances in Nuclear Power Plants (ICAPP) and has been general and program chair for ICAPP as it has become one the prime ANS international meetings. Also, he is recognized for his support and insights on a broad range of international activities on behalf of the Society."

Awards

Siegfried S. Hecker was awarded the ***Seaborg Medal*** for "a lifetime career of excellence devoted to nuclear materials science, education and public service for fundamental scientific knowledge, and nuclear security for the benefit of all mankind." Hecker is a senior fellow at Los Alamos National Laboratory.

Mihail Balanescu was the recipient of the ***Alvin M. Weinberg Award*** for "singular contributions in and major development of nuclear technology in Romania, and for national and international environmental protection." Balanescu is one the founders of the Romanian nuclear program and former vice president of IAEA's board of governors.

Richard N. Hwang received the ***Eugene P. Wigner Reactor Physicist Award*** presented in recognition of "his outstanding development of novel methods for treating neutron resonances, including the multi-pole treatment for resolved resonances, an unresolved resonance treatment that is employed in computer codes throughout the world, and for significant improvements in Doppler broadening methods." Hwang, a senior physicist at Argonne National Laboratory, is an ANS Fellow.

George H. Miley was presented with the ***Radiation Science and Technology Award*** for "creative contributions to radiation science and technology in furthering the development of nuclear batteries, nuclear pumped lasers, and small fusion-based neutron sources for industrial neutron activation analysis." Miley is an ANS Fellow and has been a member since 1961. He is a professor in the Nuclear, Plasma, and Radiation Department of the University of Illinois.

Charles H. Moseley, Jr. received the ***Standard Service Award*** in recognition of "outstanding contributions to the ANS Standards Committee, particularly for leadership of the Standards Board, pioneering work on ANS 3.2 on operational quality assurance, and contributions to the Nuclear Facilities Standards Committee, as well as leadership roles with ASQ (the American Society for Quality) and ASME (the American Society of Mechanical Engineers)." Moseley is manager of quality Programs at BWXT Y-12, LLC. He has been a member of the ANS since 1973.

Obituary

The news of the death of **Marshall Neil Baldwin**, 74, was to RSICC by Larry L. Wetzel. Baldwin passed away Monday, Feb. 21, 2005, at his residence. He earned his Bachelor of Arts and Bachelor of Science Degrees from Lynchburg College and his Masters Degree from Vanderbilt University in 1957. He retired from Babcock & Wilcox after 32 years of service as a physicist. During his career he helped design the shielding for the nuclear ship *Savannah* and made many seminal contributions to power reactor design and operations. He was a U.S. Army veteran of the Korean War. Wetzel also included an extended retrospective view of Neil's career and a tribute from himself and fellow Baldwin colleagues Gary Hoovler and Francis Alcorn, which can be found at /NeilBaldwinRev2.htm.

Changes to the Computer Code and Data Collection

PSR-351/PREPRO2004

The Nuclear Data Center at the International Atomic Energy Agency, Vienna, Austria, contributed a newly frozen version of the pre-processing code system for data in ENDF/B format. PREPRO 2004 is a modular set of computer codes, each of which reads evaluated nuclear data in the ENDF/B format, processes the data and outputs it in the ENDF/B format. Each code performs one or more independent operations on the data. The codes are named "the pre-processing" codes because they are designed to pre-process ENDF/B data for further processing in other applications. These codes are designed to operate on virtually any type of computer with the included capability of optimization on any given computer. They can process datasets in any ENDF/B format, ENDF/B-I through ENDF/B-VI, and are even designed to handle new ENDF/B-VII evaluations. Additional information is available on the PREPRO website: http://www-nds.iaea.org/ndspub/endf/prepro/.

Each of the PREPRO2004 modules performs a different function on ENDF/B data files. A brief description of how the codes are used is listed below:

Linear - Linearize cross sections
Recent- Reconstruct cross sections from resonance parameters
Sigma1- Doppler broaden cross sections
Activate - generate activation cross sections (MF=10) from MF=3 and 9 data
Legend - Calculate/correct angular distributions
Sixpak - Convert double differential data to single differential
Fixup - Correct format and cross sections, define by summation
Dictin - Create reaction dictionary (MF=1, MT=451)
Merger - Retrieve and/or Merge evaluated data
Groupie - Calculate group averages and multi-band parameters
Complot - Plot comparisons of cross sections (MF=3, 23), Comhard for hardcopy
Evalplot - Plot evaluated data (MF=3, 4, 5, 23, 27), Evalhard for hardcopy
Mixer - Calculate mixtures of cross sections

Virgin - Calculate transmitted uncollided (virgin) flux and reactions
Convert - Convert codes for computer/precision/compiler
Relabel - Relabel and sequence programs

PREPRO2004 is written in standard Fortran. UNIX, Linux and OpenVMS systems require X11 for the graphics capability. For use on PCs running Windows or Linux and on PowerMAC, the distribution includes ready-to-use executables. All other systems require a Fortran compiler. PREPRO2004 was tested at RSICC on the following machines:

Pentium 4 under Windows 2000, Service Pack 4
Pentium 4 under WindowsXP, Service Pack 2
Dell PowerEdge 2300 running Linux - Red Hat ASP (Advanced Server) 3.1
AMD Athlon running RedHat Linux 7.3 Linux with Absoft Pro Fortran 8.0
IBM RS/6000 Model 590 running AIX 5.1 with XL Fortran 08.01.0000.0003
SunOS 5.9 with Sun WorkShop 6 update 1 Fortran 95 6.1 2000/09/11
DEC Alpha OSF1 Tru64 with V5.1A HP Fortran Compiler V5.5A-3548-48D88

The package is transmitted on a CD which contains the referenced document in electronic form and five machine-dependent compressed files. The extracted directories contain Fortran 77 source files, executables for PC and MAC, sample input and output, and information files. Reference: IAEA-NDS-39, Rev. 12 (November 22, 2004). Fortran 77 on IBM PC and PowerMAC, DEC Vax, Sun, IBM RS/6000 (P00351/MNYCP/04).

DLC-219/POINT2004

Lawrence Livermore National Laboratory, Livermore, California, contributed this temperature-dependent, linearly interpolable, tabulated cross section library based on ENDF/B-VI, Release 8. Both the current Point 2004 and the previously published Point 2003 (DLC-218) are based on exactly the same ENDF/B-VI, Release 8 data. The difference between them is the accuracy to which the reconstructed data is presented and the media on which they are distributed. The Point2004 library is almost 2.5 times as large and is distributed on a single DVD.

As distributed, the original evaluated data include cross sections represented in the form of a combination of resonance parameters and/or tabulated energy-dependent cross sections, nominally at 0 Kelvin. For use in applications this library has been processed into the form of temperature-dependent cross sections at eight neutron reactor-like temperatures, between 0 and 2100 Kelvin, in steps of 300 Kelvin. It has also been processed to five astrophysics-like temperatures, 1, 10, 100 eV, 1, and 10 keV. For reference purposes, 300 Kelvin is approximately 1/40 eV, so that 1 eV is approximately 12,000 Kelvin. At each temperature the cross sections are tabulated and linearly interpolable in energy.

POINT2004 contains all of the evaluations in the ENDF/B-VI general purpose library, which contains evaluations for 328 materials (isotopes or naturally occurring elemental mixtures of isotopes). No special purpose ENDF/B-VI libraries, such as fission products, thermal scattering, or photon interaction data are included.

The PSR-351/PREPRO2002 code system was used to process the ENDF/B data. Any codes which treat the ENDF/B-VI format can be used as data retrieval programs.

In this library each evaluation is stored as a separate file. The entire library is in the computer independent ENDF/B-VI character format, which allows the data to be easily transported between computers. The entire library requires approximately 4 Gb of storage. Reference: UCRL-TR-202284 (April 1, 2004). ASCII data; PC or workstation (D00219/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 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. Below is a chronological list of the conferences. More details (if available) are provided following the table.

Condensed Table of Conferences

Name of Conference	Date and Location	Web Site	Registration/ Abstract/Paper Due Date
2005 HEART Conference	Mar. 21–25, 2005 Tampa, Florida	http://erric.dasiac.com/Heart/Heart05.pdf	passed
AIChE Spring National Meeting	Apr. 10–14, 2005 Atlanta, Georgia	http://www.aiche.org/conferences/	passed
Monte Carlo 2005 Topical Meeting	Apr. 17–21, 2005 Chattanooga, Tennessee	http://MonteCarlo2005.org	final papers March 18
Using MCNP5 for Medical Physics Applications	Apr. 17, 2005 (1–5pm) Chattanooga, Tennessee	http://montecarlo2005.org	
37th Annual National Conference on Radiation Control	April 25–28, 2005 Kansas City, Missouri	http://www.crcpd.org/2005annualmeeting.asp	
Twelfth International Symposium on Reactor Dosimetry	May 8–13, 2005 Gatlinburg, Tennessee	http://reactordosimetry.com	passed
2005 International Congress on Advances in Nuclear Power Plants (2005 ICAPP)	May 15–19, 2005 Seoul, Korea	http://www.icapp2005.org	passed
International Nuclear Chemistry Society (INCS)	May 22–29, 2005 Kusadasi, Turkey	http://incs.ege.edu.tr/1st-INCC.html	passed
ANS Annual Summer Meeting	June 5–9, 2005 San Diego, California	http://www.ans.org/meetings	
PENELOPE	July 4–7, 2005	http://www.nea.fr/html/dbprog/Newsletter/Dec2004.htm#training	April 30, 2005
MCNP5 Intermediate/ Advanced Class	June 27–July 1, 2005 Tokyo, Japan	http://www-xdiv.lanl.gov/x5/MCNP/classinformation.html	

Name of Conference	Date and Location	Web Site	Registration/ Abstract/Paper Due Date
12th International Conference on Emerging Nuclear Energy Systems (ICENES 2005)	August 21–26, 2005 Brussels, Belgium	http://www.sckcen.be/sckcen_en/activities/conf/conferences/icenes2005/index.shtml	
Seventh Topical Conference on Nuclear Applications of Accelerator Technology "AccApp05"	Aug. 28–Sept. 1, 2005 Venice, Italy	http://AccApp05.infm.it	Mar. 31, 2005
230th American Chemical Society National Meeting	Aug. 28–Sept. 1, 2005 Washington, D.C.	www.cofc.edu/~nuclear	April 2005
XIX Nuclear Physics Divisional Conference (NPDC19) of the European Physical Society	Sept. 5–9, 2005 Pavia, Italy	http://www.pv.infn.it/~npdc19	NA
International Topical Meeting on Mathematics and Computation, Supercomputing, Reactor Physics and Nuclear Biological Applications (M&C 2005)	Sept. 12–15, 2005 Avignon, France	http://mcavignon2005.cea.fr	passed
2005 NCSD Topical Meeting	Sept. 19–22, 2005 Knoxville, Tennessee	http://meetingsandconferences.com/ncsd2005/	passed
Eleventh International Topical Meeting on Nuclear Reactor Thermal Hydraulics	Oct. 2–6, 2005 Avignon, France	http://nureth11.com/	passed

Monte Carlo 2005 Topical Meeting

Register now for Monte Carlo 2005 to be held **April 17–21, 2005,** (Sunday–Thursday). The theme of the conference is "The Monte Carlo Method: Versatility Unbounded in A Dynamic Computing World." The conference site is the Chattanooga Marriott and Convention Center in Chattanooga, Tennessee. The conference is hosted by the American Nuclear Society (ANS) Oak Ridge/Knoxville Section, with ANS Radiation Protection and Shielding Division (RPSD) as the sponsoring division and Mathematics and Computations Division (MCD) as a co-sponsor. Co-sponsors also include Oak Ridge National Laboratory (ORNL), Radiation Safety Information Computational Center (RSICC) and the Organization for Economic Cooperation and Development (OECD) Nuclear Energy Agency Data Bank (NEADB).

The Monte Carlo method and its applications have been frequently addressed at several major conferences and workshops organized in recent years in the area of nuclear applications. Monte Carlo topics have included radiation shielding, radiation physics, medical physics, and high energy physics. Significant developments have taken place in computational and data issues, resulting in state-of-the-art computer codes and tools. Monte Carlo 2005 is the next in a series devoted to the topic, following Monte Carlo 2000, which was held in Lisbon, Portugal, in October 2000.

Conference topics will include: Methods Advancements (Physics) (proton transport, neutron transport, gamma transport, electron transport, heavy ion transport); Nuclear Data Advancements (proton transport, neutron transport, gamma transport, electron transport, heavy ion transport); Mathematical and Computational Advances (experiments & benchmarks, mathematical advances, computational advances, visualization); Applications (reactor, medical, accelerator, neutron science, dosimetry, shielding, fuel cycle, waste management, space & aviation, fusion, criticality safety, non-nuclear applications).

The website is http://MonteCarlo2005.org. Full papers are due **March 18, 2005**. For information contact Bernadette Kirk (kirkbl@ornl.gov, 865-574-6176), General Chair, or Jeff Johnson (johnsonjo@ornl.gov, 865-574-5262), Technical Chair.

Using MCNP5 for Medical Physics Applications

Sponsor: Computational Medical Physics Working Group
Cost: Free

Sunday, **April 17, 2005,** 1–5 pm at the Monte Carlo 2005 Conference at the Chattanooga Convention Center, Chattanooga, Tennessee. (http://montecarlo2005.org)

"Using MCNP5 for Medical Physics Applications," will be led by Tim Goorley of the MCNP Development Team, X-5, Los Alamos National Laboratory, and Dick Olsher of HSR - 4, Los Alamos National Laboratory.

Monte Carlo techniques are increasingly popular in many medical physics applications. This half-day tutorial focuses on how to use new and old MCNP5 features for neutron, photon and electron transport problems. The tutorial will include handouts and some demonstrations by the instructor, but not hands-on computer activities for the student. The following is a draft of the topics which will be covered:

1) Overview of new MCNP5 features
   a) Mesh tallies,
   b) Photon Doppler Broadening,
   c) > 2.1 billion histories,
   d) Lattice tally enhancements
2) Geometries and Modelling
   a) MIRD Phantoms,
   b) CT_based geometries
3) Sources
4) Tallies
   a) Calculating dose w/ different tallies,
   b) Flux to Kerma factors (DE DF cards),
   c) Calculating reaction rates
5) Misc
   a) S(alpha, beta) neutron scattering treatment,
   b) Simple variance reduction,
   c) Benchmarking Studies - QUADOS,
   d) using PTRAC file for coincident counting.

National Conference on Radiation Control

The 37th Annual National Conference on Radiation Control will be held April 25–28, 2005, in Kansas City, Missouri. The theme is "Radiation Protection: Many Partners, Many Challenges." Training is offered in conjunction with the National Conference, April 22–24, 2005. The Conference of Radiation Control Program Directors, Inc. (CRCPD) is sponsoring this meeting with financial assistance from Center for Devices and Radiological Health, Food and Drug Administration, U. S. Department of Health and Human

Services, Office of Radiation and Indoor Air, U. S. Environmental Protection Agency, and U. S. Nuclear Regulatory Commission. Details are available at http://www.crcpd.org/2005annualmeeting.asp.

2005 International Congress on Advances in Nuclear Power Plants (2005 ICAPP)

The 2005 International Congress on Advances in Nuclear Power Plants will be held from **May 15–19, 2005,** in Seoul, Korea. There is no doubt that continuing support and interest will be a crucial element for the success of the first ICAPP held in Asia. The ICAPP has grown in stature since the first congress was held in 2002 to share ideas and visions for advances in nuclear power plants among operators, researchers and scholars. The 2005 ICAPP will attract the attention of the world's nuclear experts with many outstanding presentations of new developments and approaches in various studies and industrial projects. Please take the opportunity to share the results of your latest studies at the 2005 ICAPP. To ensure a successful congress, the 2005 ICAPP will consist of invited plenary sessions and topical technical sessions, as follows:

1. Water-Cooled Reactor Programs and Issues,
2. High Temperature Gas-Cooled Reactors,
3. Long-Term Reactor Programs and Strategies,
4. Operations, Performance and Reliability Management,
5. Plant Safety Assessment and Regulatory Issues,
6. Thermal Hydraulic Analysis and Testing,
7. Core and Fuel Cycle Concepts and Experiments,
8. Materials and Structural Issues,
9. Nuclear Energy and Sustainability including Hydrogen, Desalination and Other Applications, and
10. Near-Term Deployment.

Visit the website http://www.icapp2005.org to find out more about the 2005 ICAPP in Seoul.

MCNP Intermediate/Advanced Class

An Intermediate/Advanced MCNP Topics class for the MCNP (Monte Carlo N-Particle) transport code will be held in Tokyo, Japan, **June 27–July 1, 2005.** This class will be taught by the team who develops and maintains MCNP.

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.

The class fee includes a notebook with all class viewgraphs (over 300) and handouts. Dinner the first evening is included as part of your registration fee and snacks and refreshments are provided during class breaks.

All classes provide interactive computer learning. Time will be available to discuss individual questions and problems with MCNP experts. To register for the class, go to http://www-xdiv.lanl.gov/x5/MCNP/classinformation.html.

MCNPX Workshops

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

June 13–17	Introductory	Santa Fe, NM
Aug. 1–5	Introductory	Seoul, Korea
Sept. 19–23	Intermediate	Washington, D.C.
Nov. 7–11	Introductory	Santa Fe, NM

MCNPX is the LANL all-particle, all-energy (eV-TeV) Monte Carlo transport code based on MCNP4C, LAHET, CEM, etc. MCNPX has been in active development since 1995 and is sponsored by the particle accelerator community. It has now become an accepted tool for a broad range of applications by nuclear engineers, physicists, and scientists. The MCNPX development effort has expanded the use of the Los Alamos tools to applications such as APT, waste transmutation, accelerator shielding and health physics, particle beam cancer therapy, space shielding and cosmic ray analysis, single event effects in semiconductors, radiography, and more detailed analysis of the effects of light and heavy ions in matter. In addition, the entire functionality of MCNP4C is retained. New variance reduction and data analysis techniques, many adapted from high-energy accelerator methodologies, have also been added, such as the extensive "mesh tally" capability which allows up to 3-d plotting of particle tracks, fluence and fluence-derived quantities, energy deposition, next event estimator generation contributions and particle sources.

The workshops include hands-on instruction, generally on PC Windows machines. Subject to participant export approval for 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.

Electron-Photon Transport Modelling with PENELOPE-2005 – Physics, Code Structure and Operation

PENELOPE is being updated to include several new features and an updated database. An advanced training course/workshop entitled "Electron-Photon Transport Modelling with PENELOPE-2005 - Physics, Code Structure and Operation" is scheduled for July 4–7, 2005, at the Facultat de Fisica (ECM), Universitat de Barcelona, Diagonal 647, 08028 BARCELONA, Spain.

This course is addressed to researchers in radiation physics and its applications. The main objective is to provide the participants with a detailed description of PENELOPE-2005 with an ample perspective on Monte Carlo methods for simulation of electron/photon transport. The reliability of the interaction models and the accuracy of the numerical methods and approximations implemented in the code will be discussed. Examples of simulation results and benchmark comparisons with experiment will be presented. The course will include practical sessions on the use of the generic main programs, PENCYL (cylindrical geometries) and PENMAIN (quadric geometries), and on the design of the main program for specific applications.

Accommodation at the facilities of the University will be available and the weather is known to be very pleasant then. The deadline for registration is **April 30, 2005.** Links to the syllabus and registration form may be found at http://www.nea.fr/html/dbprog/Newsletter/Dec2004.htm#training.

International Topical Meeting on Mathematics and Computation, Supercomputing, Reactor Physics and Nuclear and Biological Applications

The International Topical Meeting on Mathematics and Computation, Supercomputing, Reactor Physics and Nuclear and Biological Applications will be held at the 'Palais des Papes,' Avignon, France, **September 12–15, 2005.**

The meeting offers an environment for interdisciplinary exchange among researchers in the nuclear field and comprises 19 General Technical sessions and 13 Invited Technical sessions. Details on the sessions and on the organization of the meeting are given at the web site: http://mcavignon2005.cea.fr/.

Papers are solicited in all areas of computational and mathematical methods and related disciplines including reactor physics, material sciences, shielding, fluid-dynamics, medical and biological applications, environmental sciences, fundamental mathematics and benchmarking.

We are now less than one year from the meeting dates and our web has been opened for the submission of extended summaries (1000 words < 1500 words). The deadline for summary submission is January 15, 2005. Instructions on summary submission are given in the web pages under the 'Authors' button.

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

DATES: **June 6 –10, 2005** (4.5 days)
FEE: $1,450 per person
PLACE: The MESA Complex, Room 130, University of New Mexico-Los Alamos Campus

Monte Carlo calculations are ideally suited to solving a variety of problems in radiation protection and dosimetry. This course is aimed at the health physicist, 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. Extensive interactive practice sessions are conducted on personal computers. 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, 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. 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: Los Alamos National Laboratory, Group HSR-4, MCNP Class, David Seagraves, Mail Stop J573, Los Alamos, NM 87545.

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

Nuclear Applications of Accelerator Technology "AccApp05"

The forthcoming International Topical Meeting on Nuclear Applications of Accelerator Technology (AccApp'05) is the seventh in a series of international meetings of the Accelerator Applications Division of the ANS. It is scheduled for **August 28–September 1, 2005,** on the Island of San Servolo, Venice, Italy. The purpose of AccApp'05 is to provide an international forum for presenting and discussing the use of particle accelerator technology for a variety of applications. It is intended to focus on a wide area of applications including, spallation neutron sources, isotope production, medical therapy, nuclear waste transmutation, energy production, high power accelerators under construction and future projects, material issues in a particle environment, nuclear data and experiments, codes and models for particle transport, system engineering, thermo hydraulics, contraband detection and radiation protection. For more information see: http://www.nea.fr/listsmh/satif/pdf00004.pdf.

Eleventh International Topical Meeting on Nuclear Reactor Thermal Hydraulics

NURETH is the foremost international technical meeting on nuclear technology thermal hydraulics. The NURETH-11 meeting will be held in the historic Palace of the Popes in Avignon, France, **October 2–6, 2005.** For more information please go to http://nureth11.com/.

Reactor Dosimetry - 12th International Symposium

Approximately every three years the ASTM International Committee E10 on Nuclear Technology and Applications and the European Working Group on Reactor Dosimetry organize a symposium on reactor dosimetry. The 12th International Symposium on Reactor Dosimetry will be held in Gatlinburg, Tennessee, **May 8– 13, 2005.** This symposium will be of interest to anyone involved in reactor dosimetry, including researchers, manufacturers and representatives from industry, utilities and regulatory agencies. The symposium theme is dosimetry for the assessment of irradiated reactor materials and reactor experiments, featuring radiation metrology techniques, data bases and standardization. Additional information on paper submittal and specific focus topics can be obtained by visiting the Symposium's web site http://www.reactordosimetry.com. In addition to the 100 to 120 oral and poster papers on the topics given on the web site, the symposium will feature six informal round-table workshops and two introductory level tutorials. The workshops will focus on discussions of problems, conflicts, recommendations, news and ideas. The workshop titles for the 12th Symposium will be: Accelerators and Fusion, Adjustments Methods and Uncertainties, Cross Section Files and Uncertainties, LWR Surveillance Dosimetry, Radiation Damage Correlations, and Test and Research Facilities. The two introductory level tutorials will be held in parallel and will address the topics of "Radiation Effects in Reactor Materials" and "Neutron Scattering Applications in Material Science." This symposium is a must-attend meeting for those serious about the field of radiation dosimetry and will offer the opportunity for sharing ideas and discussions with colleagues in the field of radiation dosimetry. This meeting will also be ideal for those new to the field who want to be up to date on dosimetry related issues.

CALENDAR

March 2005

Forty-First Annual Meeting of the National Council on Radiation Protection and Measurements, Mar. 30–31, 2005, Arlington, VA. Additional information: http://www.ncrp.com.

April 2005

AIChE Spring National Meeting, Apr. 10–14, 2005, Atlanta, GA. Contact: James J. Laidler (630-252-4479, fax 630-972-4479, email laidler@cmt.anl.gov url http://www.aiche.org/conferences/).

Monte Carlo 2005 Topical Meeting, Apr. 17–21, 2005, Chattanooga, TN. Contact: Bernadette Kirk (tel 865-574-6176, fax 865-241-4046, email kirkbl@ornl.gov, url http://MonteCarlo2005.org).

May 2005

12th International Symposium on Reactor Dosimetry, May 8–13, 2005, Gatlinburg, TN. Contact: Dr. James M. Adams (tel 301-975-6205, fax 301-926-1604, url http://reactordosimetry.com).

Radiation Transport Calculations Using the EGS Monte Carlo System, May 9–13, 2005, Ottawa, Canada. Contact: Nikki Dignard (tel 613-520-4388, fax 613-520-4389, email NikkiDignard@pigeon.carleton.ca, url http://www.physics.carleton.ca/~drogers/EGScourse05/).

1st International Nuclear Chemistry Society (INCS), May 22–29, 2005, Kusadasi, Turkey. For more information: http://incs.ege.edu.tr/1st-INCC.html.

June 2005

ANS Annual Summer Meeting, June 5-9, 2005, San Diego, CA. For more information: url http://www.ans.org/meetings/.

MCNPX Introductory Workshop, June 13–17, 2005, Santa Fe, CA. Contact: Bill Hamilton (tel 505-455-0312, email bill@mcnpxworkshops.com, url http://mcnpxworkshops.com for details).

July 2005

PENELOPE-2005 Training Course, July 4-7, 2005, Barcelona, Spain. http://www.nea.fr/html/dbprog/Newsletter/Dec2004.htm#training.

August 2005

MCNPX Workshop, Aug. 1-5, 2005, Seoul, Korea. Contact: Bill Hamilton (tel 505-455-0312, email bill@mcnpxworkshops.com, url http://mcnpxworkshops.com for details).

12th International Conference on Emerging Nuclear Energy Systems (ICENES 2005), Aug. 21-26, 2005, Brussels, Belgium. For more information: http://www.sckcen.be/sckcen_en/activities/conf/conferences/icenes2005/date_place.shtml.

Seventh Topical Conference on Nuclear Applications of Accelerator Technology "AccApp05", Aug. 28-Sept. 1, 2005, Venice, Italy. For more information: http://www.nea.fr/listsmh/satif/pdf00004.pdf .

September 2005

XIX Nuclear Physics Divisional Conference (NPDC19) of the European Physical Society, Sept. 5–9, 2005, Pavia, Italy. Contact: Saverio Altieri (email saverio.altieri@pv.infn.it, url http://www.pv.infn.it/~npdc19).

International Topical Meeting on Mathematics and Computation, Supercomputing, Reactor Physics and Nuclear Biological Applications (M&C 2005), Sept. 12–15, 2005, Avignon, France. Contact: Dr. Richard Sanchez (email avignon2005@drnsac.cea.fr; url http://mcavignon2005.cea.fr).

MCNPX Intermediate Workshop, Sept. 19–23, 2005, Boston, MA, or Washington, D.C. Contact: Bill Hamilton (tel 505-455-0312, email bill@mcnpxworkshops.com, url http://mcnpxworkshops.com for details).

2005 NCSD Topical Meeting, Sept. 19–22, 2005, Knoxville, TN. For more information: http://meetingsandconferences.com/ncsd2005/.

October 2005

Eleventh International Topical Meeting on Nuclear Reactor Thermal Hydraulics, Oct. 2–6, 2005, Avignon, France. For more information: http://nureth11.com, nureth11@cea.fr.

November 2005

MCNPX Introductory Workshop, Nov. 7–11, 2005, Santa Fe, CA. Contact: Bill Hamilton (tel 505-455-0312, email bill@mcnpxworkshops.com, url http://mcnpxworkshops.com for details).