Radiation Safety Information Computational Center

No. 483   May 2005

Aim at the sun, and you may not reach it; but your arrow will fly far higher
than if aimed at an object on a level with yourself. — J. Howes

"One of the Best"

Many remarks from those attending the Monte Carlo 2005 Topical Meeting held in Chattanooga, Tennessee, April 17–21, 2005, included "one of the best." The organizing committee was commended for the selection of an outstanding venue for the meeting, more than adequate facilities, and even chamber-of-commerce weather. However, it is the quality of the work presented by those who attended that raises the bar for subsequent conferences. More than a third of those attending came from outside the United States, lending international diversity to the topics covered.

Topical conferences are primarily held to provide a particular community a forum for the technical exchange of their research and vision of the future as well as an opportunity to network and renew acquaintances with colleagues and peers from around the world. The Monte Carlo 2005 conference achieved excellent success in both of these areas for Monte Carlo method programmers and users. The conference had over 200 attendees with more than one-third of the participation from the international community. The approximately 170 papers presented explored the many advances in Monte Carlo methods and scientific applications. A mini-plenary kicked-off the technical program each morning. The focus of the plenary talks was directed towards the whole Monte Carlo community with many of the major Monte Carlo code packages highlighted. There were also plenary talks on the future direction of high speed computing and the next physics challenges for the Monte Carlo method. Four con-current sessions each day provided the attendees a mix of methods development, application, or verification and validation presentations to attend; insuring there was something interesting going on at all times for all the attendees. A special session, organized by George Xu and Keith Eckerman on "Tomographic Models for Radiation Protection Dosimetry," was very popular with the conference attendees and emphasized one of the fastest growing areas for the development and application of the Monte Carlo method – the medical field.

The theme of the conference was "The Monte Carlo Method: Versatility Unbounded in a Dynamic Computing World". The wording of this theme captured the essence of what this conference sought to

convey to the community. The word *Versatility* represented the flexibility of the method in both application and in computer architecture. The word *Unbounded* captured the perceived unlimited growth potential, and *Dynamic* captured all aspects of the present computing environment (serial and parallel) as well as the rapidly changing future environment. Through the papers and presentations, this conference demonstrated all of these qualities of the Monte Carlo method, resulting in a highly successful technical milestone for the community.— *Jeffrey O. Johnson, Technical Chairman*

Clifford G. Shull Fellowship

The Spallation Neutron Source at Oak Ridge National Laboratory (ORNL) has announced establishment of the Clifford G. Shull Fellowship. A co-recipient of the 1994 Nobel Prize in physics, Shull began his work in 1946 at Oak Ridge National Laboratory. He has been called the "Father of Neutron Scattering," and this fellowship recognizes his pioneering work in the field.

The Shull Fellowship Program is directed to recent doctoral-degree recipients of exceptional ability who show clear and definite promise of becoming outstanding leaders in scientific research and development. The Shull Fellowship is open to fields of science and engineering that further advances in neutron science. Shull fellows will be sponsored by the Spallation Neutron Source and High Flux Isotope Reactor facilities. Fellowships will be two-year appointments. A maximum of ten appointments will be made over several years. At the end of the appointment, Shull fellows could be converted to staff positions with an ORNL division or program. If you have questions concerning the Shull Fellowship Program please contact Bob Martin at 241-2950 or email martinrg@ornl.gov.

Catalogue of Radiological Risk Assessment Parameters

The federal Interagency Steering Committee On Radiation Standards (ISCORS) has prepared a web-based catalog of information on existing sources of environmental modeling data, entitled ISCORS Catalog of References to Parameter Values and Distributions Used in Environmental Pathway Modeling for Cleanup of Sites Contaminated with Radioactivity. It is found at http://web.ead.anl.gov/iscors/. The website is designed to be easy to use and easily updated. The risk assessment community is encouraged to utilize this site as a source of information and to submit additional references for parameters to the catalog. More than 300 references have been entered into the catalog.

Please consider taking a few minutes to visit the catalog and submit references to the database. Keeping the catalog relevant will depend on all of us. If you have additional questions about the catalog, contact Mark Thaggard, (US NRC) at 301-415-6971 or mxt3@nrc.gov. (Member organizations of ISCORS are the EPA, the NRC, the DOE, the DoD, other federal agencies, and for this project, the state of Colorado, representing the states).

Submitted by Phil Egidi, Colorado Department of Public Health and Environment phil.egidi@state.co.us.

Obituaries

Walter J. Apley

Walter J. Apley, a lifetime member of the American Nuclear Society, died April 4, 2005, in Richland, Washington. Dr. Apley was born July 9, 1948. He earned his bachelor's and masters degrees in engineering from Stanford University. After serving five years as a nuclear submarine officer, he continued study for his masters and doctorate degrees in nuclear engineering at the University of Washington. In 1977 he began his career at the Pacific Northwest National Laboratory, where he held several leadership

positions and served briefly as interim laboratory director in early 2003. He was an invaluable member of the Battelle Energy Alliance team that successfully bid on the management of the Idaho National Laboratory.

He joined the ANS in 1978 and his support of the Society included serving as chair of the Eastern Washington Section (1994–1995) and as vice chair and executive committee member of the Nuclear Operations Division (1993–1998). He was elected to a three-year term on the ANS Board of Directors in 2002 and chosen by the ANS Nomination Committee as a candidate for vice president/president-elect for 2005–2006, but withdrew for health reasons.

Bethe–Giant of 20th Century Physics

Hans Bethe, professor emeritus at Cornell University, died at his home in Ithaca, N.Y.; he was 98. Bethe was born in Strasbourg (then in Germany, now a part of France) in 1906. After having fled Nazi Germany in 1933, by way of England, he immigrated to the United States, where he took a position as an assistant professor at Cornell University in 1935. He would teach and work at the university for 70 years. During his career, Dr. Bethe published more than 300 scientific papers, including a series of papers published in the late 30s, known as "Bethe's bible." In 1967 he was awarded the Nobel Prize in physics for his work in nuclear astrophysics. His teaching career was interrupted when Robert Oppenheimer recruited him to lead the theoretical physics division of the Manhattan Project at Los Alamos, New Mexico. He returned to his academic life at Cornell after the war where he influenced and guided many students. He also served on the President's Science Advisory Committee during the Eisenhower, Kennedy, and Johnson administrations. In tribute, Cornell University President Jeffrey Lehman said, "The world has lost one of the great pioneers of 20th century physics, and Cornell has lost a beloved teacher, mentor, and friend. In the breadth of his insight, the rigor of his research, the depth of his social conscience, and the steadfastness of his commitment to Cornell, Hans Bethe set the standard for engaged scientific citizenship that will serve as a beacon for generations to come."

The facts of this article originate with the March/April 2005 issue of *ANS News* and from Volume 36, Number 25, March 10, 2005, issue of the *Cornell Chronicle* available online at http://www.news.cornell.edu/Chronicle/05/3.10.05/Chron.html. You will find at http://bethe.cornell.edu/index.html a series of three lectures on quantum theory given by Bethe when he was 93.

Kalman Shure

Kalman Shure, MIT grad and RSICC supporter, died April 14, 2005. After earning a doctorate in physics from MIT, Dr. Shure embarked on a 43-year career at Bettis Atomic Power Laboratory, the government-owned lab in West Mifflin, Pennsylvania, that develops naval nuclear propulsion technology. Besides work on the design of the *Nautilus*, the first nuclear submarine, Shure was involved with the development of many design methods and standards at Bettis for nuclear shielding in other nuclear applications. Kal Shure was an early RSIC coordinator, who, along with others in the nuclear industry, advised the newly established information analysis center in shielding related to both naval and aircraft nuclear propulsion. He worked closely with RSIC's David Trubey in developing design methods and standards for shielding within the American Nuclear Society's Standards program. His encouragement to the RSIC research staff was important in early analysis efforts. According to Betty F. Maskewitz, Kal Shure's contribution to shielding technology was an important effort in advancing the state-of-the-art in nuclear propulsion. "He was respected internationally," said I. K. Abu-Shumays of San Diego, Calif., who worked with Dr. Shure at the lab from 1974 until his retirement in 1994.

Mildred Wayne Landay (July 15, 1918 – May 11, 2005)

Mildred Wayne Landay, secretary/administrative assistant for 15 years in RSIC, died May 11, 2005, following a long illness. She entered Oak Ridge National Laboratory as an Information Assistant in the Neutron Physics Division's Radiation Shielding Information Center (RSIC) and worked through increasing responsibilities and several job titles for the next 15 years. Among many accomplishments through those years she produced the monthly *RSIC Newsletter* and assisted with the publication of numerous reports and publications.

Mildred assisted with scientific seminars, conferences, and workshops at ORNL and elsewhere. She will be remembered by many in the nuclear power industry as secretary to the September 1986 ANS/Nuclear Power- sponsored People-to-People scientific mission to the European Eastern Bloc countries, including the Soviet Union following the Chernobyl accident in the Ukraine – winning 'kudos' for her services.

The Landays were hospitable – especially to foreign visitors to ORNL. Returning visitors ask about Mildred, remembering the fantastic pancake breakfasts they had at the Landay home. A 1980 Japanese delegation entitled "Technology Transfer Through International Movements of Manpower" declared that the opportunity to see an American home and to enjoy the Landay hospitality was the highlight of their visit.

This obituary, carried on the internet via the RSICC Newsletter, is a reminder of the committed staff members who serve daily to help advance the state-of-the-art of RSICC's subject coverage.

—Betty F. Maskewitz

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.

Fall 2005 SCALE Training Courses at ORNL

Date	Title	Registration Fee*	Description
October 17–21, 2005	**SCALE Source Terms and Shielding Course**	$1800	SCALE shielding and depletion/decay sequences (including ORIGEN-ARP)
October 24–28, 2005	**KENO V.a Criticality Safety Course**	$1800	CSAS/KENO V.a (including KENO3D and GeeWiz

October 31– November 3, 2005	**TSUNAMI Sensitivity/Uncertainty Tools** (Experienced KENO users only)	$1500	1-D and 3-D sensitivity/uncertainty analysis using XSDRNPM and KENOV.a

*A late fee of $300 will be applied after September 17, 2005. A discount of $600 per each additional week will be applied for registration to multiple courses. Course descriptions can be found at http://www.ornl.gov/sci/scale/training.htm.

SCALE Source Terms and Shielding Course

The SCALE Source Terms and Shielding Course covers SAS2 and ORIGEN-ARP (depletion/source-term generation), SAS1/XSDRNPM (1-D neutron/gamma shielding), SAS4/MORSE-SGC (3-D Monte Carlo neutron/gamma shielding), and QADS/QAD-CGGP (3-D point kernel gamma shielding). The course will feature the use of the SCALE Windows GUIs: OrigenArp for Windows, ORIGEN-S plotting utility PlotOPUS, and the ESPN shielding input processor for SAS4.

KENO V.a Criticality Safety Course

The SCALE KENO V.a Criticality Course focuses on KENO V.a and the associated criticality analysis sequences in CSAS. KENO V.a is a widely used 3-D multigroup Monte Carlo criticality safety code that has been in use for 20 years. KENO V.a is a fast, easy-to-use code that allows users to build complex geometry models using basic geometrical bodies of cuboids, spheres, cylinders, hemispheres, and hemicylinders. Two-dimensional color plots of the geometry model can be generated in KENO V.a or the model may be viewed using the KENO3D 3-D visualization tool.

TSUNAMI Sensitivity/Uncertainty for Criticality Safety Course

Sensitivity coefficients produced by the TSUNAMI sequences predict the relative changes in a system's calculated k-eff value due to changes in the neutron cross-section data. TSUNAMI produces sensitivity data on a groupwise basis for each region defined in the system model. First-order perturbation theory is used to compute sensitivity coefficients from both cross-section and flux data. TSUNAMI folds the sensitivity data with cross-section covariance data to calculate the uncertainty in the calculated k-eff value due to tabulated uncertainties in the cross-section data. The applicability of benchmark experiments to the criticality validation of a given application can be assessed using S/U-based integral indices that can quantify system similarity. Attendees must have attended a KENO course or be experienced KENO users.

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.

Seminar and Training on Scaling, Uncertainty and 3D Coupled Code Calculations in Nuclear Technology

The 3D S.UN.COP Team is pleased to announce that the Department of Mechanical, Nuclear and Production Engineering (DIMNP) of the University of Pisa and the Faculty of Electrical Engineering and Computing (FER) of the University of Zagreb offer a Seminar and a Training in the field of Scaling, Uncertainty and 3D Neutron Kinetics Thermal-hydraulic Coupled Codes Calculations (3D S.UN.COP) in Nuclear Technology. The Seminar will take place at the Faculty of Electrical Engineering and Computing (FER) of the University of Zagreb, Zagreb (Croatia) from 20 June–8 July 2005.

The seminar is subdivided in three parts and participants may choose to attend one, two, or three weeks according to their interests in the following contents:

1st week: Applicative-Fundamental Aspects

2nd week: Applicative Aspects and Practical Training

3rd week: Practical Training and Exam

Further information about participation, registration forms and practical information may be requested from a.petruzzi@ing.unipi.it and at the website: http://dimnp.ing.unipi.it/3dsuncop2005/.

The 3D S.UN.COP Team: Prof. F. D'Auria, Dr. Tomislav Bajs, Dr. A. Petruzzi, and Dr. C. Parisi

On-line Condition Monitoring of Equipment and Processes in Nuclear Power Plants Using Advanced Diagnostic Systems

The International Atomic Energy Agency is sponsoring a technical meeting, "On-line Condition Monitoring of Equipment and Processes in Nuclear Power Plants Using Advanced Diagnostic Systems," in Knoxville, Tennessee, June 27–30, 2005. The meeting is hosted by Analysis and Measurement Services Corporation in Knoxville. Please contact H. M. Hashemian, President, Analysis and Measurement Services Corporation, AMS 9111 Cross Park Drive, Building A-100, Knoxville, TN 37923 (phone: 865-691-1756, fax: 865-691-9344, email: info@ams-corp.com or hash@ams-corp.com, website: www.ams-corp.com). You may also refer to the Information Sheet or the Daily Agenda.

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.

Advanced MCNP Variance Reduction

An Advanced MCNP Variance Reduction class for the MCNP (Monte Carlo N-Particle) transport code will be held in Los Alamos, NM, August 23–25, 2005. This class will be taught by the team who develops and maintains MCNP.

This class will focus specifically on using variance reduction methods in MCNP. Basic experience with MCNP is required. The class will include interactive computer sessions with PC's running Microsoft Windows.

The course will be a mixture of theory and practice. Specific topics include: mean and variance, score distribution vs. mean distribution, central limit theorem, intuitive notions of variance reduction, MCNP variance reduction techniques, how the weight window generator works, deficiencies of biasing by importance function, how not to use dxtran, when to stop attempting more variance reduction, reading an event log, comments on Monte Carlo and equations, "weight" in MCNP and Monte Carlo, and variance reduction for the pulse height tally (f8).

Detailed information and registration is available at http://laws.lanl.gov/x5/MCNP/aug05var.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. 8–12	Intermediate	Seoul, Korea
Sept. 5–9	Advanced	Bologna, Italy
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.

RESRAD and RESRAD-BUILD Training Workshop

Argonne National Laboratory will conduct a training workshop on the use of both deterministic and probabilistic RESRAD and RESRAD-BUILD computer codes June 27–July 1, 2005. This workshop is sponsored by the U.S. Department of Energy. The latest versions of RESRAD (Version 6.3) and RESRAD-BUILD (Version 3.3) will be used at the workshop.

The workshop will provide technical personnel with an overview and history of the RESRAD and RESRAD-BUILD codes, the calculation methodologies and databases, special features of the code, its application to site cleanups, dose and risk assessments, and code verification and validation. Interactive computer demonstrations guide the participants through data input and output steps. Instructor support helps the students complete the hands-on problem solving sessions throughout the workshop.

The workshop has been granted 48 Continuing Education Credits (CECs) by the American Academy of Health Physics (AAHP). The registration fee is $600.00 (US). All students will receive the latest version of RESRAD and RESRAD-BUILD codes, user's manuals and other supporting documents, and handouts/training materials. Space is limited. For registration, please contact Carole Ealy at 630-252-5677; email: cealy@anl.gov or fill out the on-line registration at the RESRAD web site: http://www.ead.anl.gov/resrad. The agenda of the training workshop is also available online.

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. Links to the syllabus and registration form may be found at http://www.nea.fr/html/dbprog/Newsletter/Dec2004.htm#training.

230th American Chemical Society National Meeting

Applied Modeling and Computations in Nuclear Science will be held in Washington, DC, August 28–September 1, 2005. The meeting is sponsored by the Division of Nuclear Chemistry and Technology (NUCL) of the American Chemical Society (ACS), and the American Nuclear Society (ANS). The purpose of this symposium is to bring theoretical and computational work in applied nuclear science under one umbrella, so that the nuclear scientists interested in modeling have a broader forum for their research, as well as to enable learning related techniques. Cross-disciplinary computations are also of interest. Tentative topics include:

1. Statistical aspects of radioactivity, such as uncertainties, detection limits, novel statistics.
2. Radiation transport methods (Monte Carlo and deterministic), and nuclear data evaluations.
3. Calculating of the response and theoretical designing of radiation detectors.
4. Spectral deconvolution and fitting: alpha, beta, gamma spectroscopy.
5. Calculations of chemical structure and reactions involving radionuclides.
6. Transport models of radioactive contaminants in the environment.
7. Health physics calculations: dosimetry and risk assessment.
8. Medical radiation physics calculations: radiotherapy and imaging.
9. Nuclear sensing: modeling of well logging and gauges.
10. Computers in nuclear science laboratory, QA/QC, LIMS, etc.
11. Novel and sophisticated methods of nuclear data analysis.
12. Nuclear modeling of interest to counter-terrorism.
13. Novel computational algorithms of interest to applied nuclear science.

Registration and housing reservations open on-line and the final program appears in C&EN and on the ACS web page in June/July 2005. Full papers are due at the conference August/September 2005 in MS Word format only. Instructions will be distributed to the accepted speakers.

The ACS web page is www.chemistry.org. For further information please contact Thomas Semkow, Wadsworth Center, New York State Department of Health and SUNY, P.O. Box 509, Albany, NY 12201-0509, phone: +518-474-6071, fax: +518-474-8590, email: tms15@health.state.ny.us. The complete announcement as submitted by Thomas M. Semkow can be found at http://www.cofc.edu/~nuclear/2005WashingtonComputationSymposium.pdf.

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.

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/.

11th 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/.

CALENDAR

May 2005

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, "The Next 50 Years: Creating Opportunities," June 5–9, 2005, San Diego, CA. For more information: url http://www.ans.org/meetings/annual/.

Practical MCNP for the Health Physicist, Medical Physicist, and Rad Engineer, June 6–10, 2005. Contact David Seagraves (phone 505-667-4959, fax 505-665-7686, email dseagraves@lanl.gov).

MCNPX Introductory Workshop, June 13–17, 2005, Santa Fe, CA. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com, url http://mcnpxworkshops.com for details).

Seminar and Training on Scaling, Uncertainty and 3d Coupled Code Calculations in Nuclear Technology, June 20–8 July 2005, University of Zagreb, Zagreb, Croatia. Contact: a.petruzzi@ing.unipi.it and at the website: http://dimnp.ing.unipi.it/3dsuncop2005/

On-line Condition Monitoring of Equipment and Processes in Nuclear Power Plants Using Advanced Diagnostic Systems, June 27–30, 2005, Knoxville, Tennessee,. Contact: H. M. Hashemian, President, Analysis and Measurement Services Corporation AMS 9111 Cross Park Drive, Building A-100 Knoxville, TN 37923 (phone: 865-691-1756, fax: 865-691-9344, email: info@ams-corp.com or hash@ams-corp.com, website: www.ams-corp.com).

Intermediate/Advanced MCNP Topics Class for the MCNP (Monte Carlo N-Particle) transport code, June 27–July 1, 2005, Tokyo, Japan. Registration http://www-xdiv.lanl.gov/x5/MCNP/classinformation.html.

RRESRAD and RESRAD-BUILD Training Workshop, June 27–July 1, 2005, Argonne National Laboratory. Contact: Carole Ealy (phone 630-252-5677; email: cealy@anl.gov, or web site: http://www.ead.anl.gov/resrad.

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. 8–12, 2005, Seoul, Korea. Contact: Bill Hamilton (phone 806-928-6021, 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.

Applied Modeling and Computations in Nuclear Science, Aug. 28–Sept. 1, 2005, Washington, DC. Contact Thomas Semkow (phone +518-474-6071, fax +518-474-8590, email tms15@health.state.ny.us).

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).

MCNPX Advanced Workshop, Sept. 5–9, Bologna, Italy. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com, url http://mcnpxworkshops.com for details).

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 (phone 806-928-6021, 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

11th International Topical Meeting on Nuclear Reactor Thermal Hydraulics, Oct. 2–6, 2005, Avignon, France. For more information: http://nureth11.com, nureth11@cea.fr.

SCALE Source Terms and Shielding Course, Oct. 17–21, 2005, Oak Ridge National Laboratory, Oak Ridge, TN. Contact: http://www.ornl.gov/sci/scale/training.htm.

KENO V.a Criticality Safety Course, Oct. 24–28, 2005, Oak Ridge National Laboratory, Oak Ridge, TN. Contact: http://www.ornl.gov/sci/scale/training.htm.

TSUNAMI Sensitivity/Uncertainty Tools, Oct. 31–Nov. 3, 2005, Oak Ridge National Laboratory, Oak Ridge, TN. Contact: http://www.ornl.gov/sci/scale/training.htm.

November 2005

MCNPX Introductory Workshop, Nov. 7–11, 2005, Santa Fe, CA. Contact: Bill Hamilton (phone 806-928-6021, email bill@mcnpxworkshops.com, url http://mcnpxworkshops.com for details).

ANS Winter Meeting and Nuclear Technology Expo, "Talk About Nuclear Differently: A Good Story Untold," November 13–17, 2005, Washington, D.C. Contact: http://www.ans.org/meetings/.

March 2006

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